

ROSS ENVIRONMENTAL ASSOCIATES, INC.

Hydrogeology, Water Quality, GIS Planning,
Contaminant Fate & Transport, Remediation,
& Regulatory Compliance and Permitting



Supplemental Site Investigation Report

**Clegg Residence
729 Corley Road
Wolcott, Vermont 05661**

**SMS Site #: 2008-3857
Site Coordinates: 44° 33' 17.55" N, 72° 29' 80.60" W**

18 May 2009

Prepared For:

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EXECUTIVE SUMMARY

Ross Environmental Associates, Inc. (**R.E.A.**) has conducted a supplemental site investigation (SSI) at the Clegg Residence located on Corley Road in Wolcott, Vermont. The SSI field investigation included: the completion of three test-pit excavations and subsequent horizontal borings along the foundation of the house; field screening of subsurface soil samples and air for the possible presence of volatile organic compounds (VOCs); completion of hand augured borings and screening of soil samples in the vicinity of the foundation drain outfall; completion, sampling and analysis of soils from three additional soil borings and subsequent installation of three monitoring wells and one hand point; the collection and analysis of groundwater samples from five on-site monitoring wells and one hand point; collection and analysis of one supply well sample; and oversight during interior cleaning of residence and application of Biosolve™ to basement floor and impacted floor expansion joint.

Available information indicates that the shallow overburden groundwater formation at the site has been threatened by the petroleum release. However, none of the Vermont Groundwater Enforcement Standards or laboratory method detection limits were exceeded in groundwater samples collected from the onsite monitoring wells during the SSI. During the previous sampling event (August 2008) low concentrations of volatile organic compounds (VOCs) were detected in the groundwater sample collected from MW-4, which was installed on the opposing side of the basement wall from where the AST spill occurred. During the most recent sampling event (January 2009) no VOCs were detected in any of the groundwater samples collected from the on-site monitoring wells (MW-3, MW-5, MW-6 and MW-7) or in the drinking water samples collected from the onsite supply well. Field observations indicate the presence of low levels of residual petroleum contamination present in soils at the edge of the basement footer wall and beneath the northwest corner of the concrete floor. At this time, the overburden groundwater formation at the site does not appear to have been significantly impacted by petroleum contamination. Available information indicates that low concentrations of migrating petroleum vapors from beneath the concrete basement floor have been neutralized during the interior cleaning and Biosolve™ application, however; the potential for future impacts to indoor air continues to exist while preferential pathways (expansion joint) remain open to the air. Laboratory analysis indicates that the on-site drinking water supply, which is located within 100 feet of the release area, has not been impacted by petroleum contamination. No VOCs were detected in water samples collected from the supply well in May and August of 2008 and January of 2009. Groundwater flow appears to be in the opposite direction, northwest, of the supply well from the release area. No other receptors appear to be impacted.

Based on the findings and conclusions of this investigation, **R.E.A.** makes the following recommendations:

1. Based on the two consecutive groundwater sampling events showing no exceedance of VGES's for petroleum compounds; the on-site monitoring wells should be closed in accordance with VT DEC guidelines.
2. The basement should be evaluated for potential vapor intrusion. All potential vapor pathways should be identified and sealed to reduce the risk of vapor intrusion from residual petroleum contamination located beneath the slab. Specifically, the expansion joint crack on the west side of the basement floor should be sealed with a VOC compliant self leveling professional grade expansion joint sealant.
3. An additional soil vapor extraction point should be installed in the vicinity of the bulkhead. This new point along with the existing vapor extraction point should be linked to a small, temporary Soil Vapor Extraction (SVE) system to assist in remediating potential sub-slab/sub-surface vapors that are present in this area and to stimulate natural sub-surface bioremediation processes.
4. Site conditions should be evaluated with respect to petroleum odors. Bi-Monthly indoor odor inspections should be performed with specific focus on first floor ambient air, basement air and air in the vicinity of the western expansion joint and any other potential vapor pathways. During the bi-monthly odor checks, ambient air at these locations should be checked for the possible presence of petroleum odors and screened for the possible presence of VOC's with a PID.
5. A summary report should be completed following the installation of the soil vapor extraction system, which should include recommendations for continued vapor recovery, additional remediation activities or site closure.

1.0 INTRODUCTION

Mr. John Clegg, with oversight by Peerless Insurance, retained the services of **Ross Environmental Associates, Inc. (R.E.A.)** to complete a supplemental site investigation (SSI) at his residence located on Corley Road in Wolcott, Vermont (**Figures 1 & 2, Appendix A**), in accordance with Vermont Department of Environmental Conservation (VT DEC) guidelines. Based on the findings of the August 2008 sampling event, additional work was completed to determine the extent of subsurface petroleum contamination at the site. In December 2008, the VT DEC approved a work plan for the supplemental site investigation. This report has been prepared by **R.E.A.** under the direction of Mr. John Clegg and Peerless Insurance, unauthorized use or reproduction of this report is prohibited without written authorization from **R.E.A.**, Mr. John Clegg or Peerless Insurance.

2.0 FIELD INVESTIGATION RESULTS AND PROCEDURES

R.E.A.'s field investigation included: the completion of three test-pit excavations and subsequent horizontal borings along the foundation of the house; field screening of subsurface soil samples and air for the possible presence of volatile organic compounds (VOCs); completion of hand augured borings and screening of soil samples in the vicinity of the foundation drain outfall; completion, sampling and analysis of soils from three additional soil borings and subsequent installation of three monitoring wells and one hand point; the collection and analysis of groundwater samples from five on-site monitoring wells and one hand point; collection and analysis of one supply well sample; and oversight during interior cleaning of residence and application of Biosolve™ to basement floor and impacted floor expansion joint.

On 17 December 2008, the bank of the unnamed tributary to the Lamoille River was inspected for the possible presence of petroleum contamination (i.e. sheening, odors, etc.) and one water sample was collected from an observed seep. All tasks outlined in the approved work plan were completed. Approximate monitoring well and soil boring locations and significant site features are shown on **Figure 3 in Appendix A**. Photographs of the investigation activities are included in **Appendix B**.

The objectives of this supplemental site investigation were to:

- Verify the presence or absence of residual petroleum contamination beneath the concrete floor of the residence.
- Further characterize the degree and extent of petroleum contamination discovered in soil and ground water at the site;
- Remove residual petroleum odors in the basement and living areas of the residence.

- Qualitatively assess the risks to environmental and public health via relevant sensitive receptors and potential contaminant migration pathways;
- Identify the need for further site characterization, appropriate monitoring, and/or remedial actions based on the site conditions.

2.1 Contaminants of Concern

Based on available information, the contaminants of concern (COC) at the Clegg Residence appear to be volatile organic compounds (VOCs) including: benzene, toluene, ethylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene total xylenes, and naphthalene. All of these compounds are typically associated with petroleum products including #2 fuel oil. A summary of various regulatory standards and chemical properties for these compounds is included on **Table 1**, Appendix A.

2.2 Foundation Excavation/Horizontal Borings

On 16 and 17 December 2008, *R.E.A.* provided oversight during the excavation of three test pits (EA-1, EA-2 and EA-3) adjacent to the residence's foundation wall to the depth of the footer. Excavation Area #1 (EA-1) was installed midway along to the west foundation wall of the residence approximately 15 feet south and west of the petroleum release located on the north side of the inside of the residence. The excavation extended to a depth of approximately eight feet below ground surface (bgs) and approximately one foot below the concrete foundation footer. The top of foundation footer was located at approximately seven feet bgs. and extended approximately two feet out from the outside edge of the foundation wall, which was believed to be 12 inches thick. The perimeter drain, constructed of four-inch perforated PVC pipe was located on top of the footer adjacent to the foundation wall. No petroleum odors were noted during excavation activities. A temporary vapor monitoring point was installed horizontally beneath the footer/ basement floor approximately six feet in from the edge of the foundation footer (three feet in from the outside edge of the exterior footer) using a KVA soil gas system. PID readings of ambient air measured thru the un-purged line from beneath footer/basement floor were 0.0 ppm. PID readings of soil samples collected from soils in the vicinity of the footer and beneath the concrete floor were all 0.0 ppm. Soils in the excavation consisted primarily of fine silty sands and gravel.

EA-2 was installed at the northwest corner of the residence, adjacent to the bulkhead access to the basement on the western side of the west foundation wall in the general vicinity of the main release area. EA-2 was extended to a depth of approximately eight feet bgs and approximately one foot below the foundation footer. The sewer drain line exiting the residence in a western direction was encountered approximately six inches bgs. A portion of this line (approximately 5.0' long) was

removed and subsequently replaced prior to backfilling in order to accommodate for excavation activities. The perimeter drain line was located in gravel bedding at approximately six feet bgs. PID readings of ambient air from within the four-inch perforated PVC perimeter pipe were 0.0 ppm. During excavation, petroleum odors were noted in soils/gravel located in the vicinity of the bottom of the foundation footer/foundation wall interface. A temporary vapor monitoring point was installed horizontally just under the foundation footer using a KVA soil gas system. The horizontal boring extended to approximately two feet in from the outside edge of the foundation wall, which was believed to be 12 inches thick. PID readings of ambient air from beneath footer/basement floor were 1.3 ppm. PID readings of soil samples collected in the vicinity of the footer and beneath the concrete floor at a depth of approximately six feet bgs. ranged from 0.0 to 53.8 ppm. Soils in the excavation area consisted primarily of medium brown sand with some cobbles. Soils within the impacted area at the base of the footer consisted of gravel bedding related to the perimeter drain. Due to the presence of elevated PID readings on soils collected in the vicinity of the bottom of the footer/foundation wall interface, one vertical vapor point (VP-1) was installed, by hand, at the bottom of the excavation. The vapor point was constructed of 0.01 slotted schedule 40, 1-inch PVC and extended to a depth of approximately eight feet bgs. Soils around the vapor point were backfilled to grade. Following installation, PID readings of ambient air from within the installed point were 0.0 ppm. During the investigation of EA-2, the basement bulk head was accessed and heavy petroleum odors were noted within the bulkhead area. No petroleum odors were noted inside the basement; however, PID concentrations from within the western expansion joint crack ranged from 3.5 to 114 ppm.

EA-3 was installed adjacent to the east side of the east foundation wall in the general vicinity north of the porch and generally between the release area and the onsite supply well. EA-3 was extended to a depth of approximately seven feet bgs at the base of the foundation footer. Installation of a temporary vapor monitoring point was attempted using a KVA, however; groundwater was present at the bottom of the excavation at the base of the footer and inhibited the ability to auger beneath the concrete footer/floor. Soils in the excavation consisted primarily of medium brown sand, gravel with some cobble and fine silty sands near the base of the footer. A PID was used to screen soils samples in the vicinity of the footer, all readings were 0.0 ppm. **R.E.A.'s** field personnel screened soil samples from each excavation for the possible presence of volatile organic compounds (VOCs) using a portable PID. The PID was calibrated with an isobutylene standard gas to a benzene reference on the day of the excavation. Soil samples were placed in resealable plastic bags, which were then sealed and agitated. Headspace in the bag was then screened for the possible presence of VOCs with the PID.

The approximate locations of the Excavation Areas are shown on **Table 2**, Appendix A.

2.3 Foundation Drain Outfall

On 17 December 2008, *R.E.A.* advanced 10 hand augured soils borings into the steep bank in the general down gradient vicinity of the foundation drain outfall. Soil samples were screened for the possible presence of VOCs using a PID. PID readings for each soil sample were all 0.0 ppm. A summary of the PID readings obtained from the hand points are included on **Table 3**, Appendix A. One hand point (HP-1) was installed at the base of the slope in a downgradient location approximately ten feet from the foundation drain outfall. A stream bank assessment of the unnamed tributary of the Lamoille River was conducted to identify possible seasonal seeps, stains, odors, etc. that were not observable during the August sampling event. No observable signs of petroleum contamination or petroleum odors were noted during the December inspection. Information and evidence obtained during the initial spill response indicated the presence of petroleum contaminated soils at the base of the foundation drain outfall during spill response activities in May 2008. The removal of approximately 0.5 cubic yards of PCS combined with the process of natural attenuation has greatly reduced the threat of petroleum contamination in this area. Biodegradation and dilution/dispersion may have aided in the attenuation of petroleum compounds in soils below the drain outfall. Three drums of petroleum contaminated soils that were removed from the area beneath the foundation drain outfall and related to work during the initial spill response, along with one drum of petroleum contaminated granulated activated vapor phase carbon used during the initial spill response, were transported off-site for disposal by Environmental Products and Services (EP&S) of Burlington, VT.

A copy of the bill of lading related to disposal of the contaminated soil is included in Appendix D.

2.4 Soil Boring and Monitoring Well Installation

On 12 January 2009, *R.E.A.* provided oversight during the installation of three soil borings and subsequent monitoring well installation (MW-5, MW-6 and MW-7) in order to further evaluate the degree and extent of soil and groundwater contamination at the site. MW-5 was installed approximately 40 feet north of the petroleum release located on the north side of the residence. SB-6 and SB-7 were installed to the northeast and east of the residence, approximately 75 and 70 feet from the release area; respectively. The approximate location of soil borings are shown on **Figure 3**, Appendix A.

The soils consisted primarily of medium to light brown sand and unsorted gravel. All of the soil borings were completed to rock refusal, which was encountered between 13 and 15 feet below ground surface (bgs). Groundwater was encountered between eight and eleven feet bgs. Photo-ionization

detector (PID) readings on soil samples collected from SB-5, SB-6, and SB-7 were all 0.0 parts per million-volume (ppmv). PID screening results and soil descriptions are included on the soil boring logs in **Appendix C**.

Each monitoring well was constructed using 1.0-inch-diameter schedule 40 polyvinyl chloride (PVC) with flush threaded joints and 0.01-inch factory-slotted well screens. All of the monitoring wells were completed with five-foot well screens. Solid PVC risers, extending to ground surface, were used to complete each well. A clean sand pack was placed around the screened section of each monitoring well extending one to two feet above the top of the screen, with a bentonite seal placed above the sand pack. Flush-mounted road-box protective casings were installed over each monitoring well. Each well was developed after installation by removing eight to ten standing volumes of water using a peristaltic pump. Soil descriptions and monitoring well construction details are included on the soil boring logs in **Appendix C**. Atlantis Drilling, LLC of Barrington, New Hampshire installed the soil borings and monitoring wells with a Geoprobe® Direct Push machine utilizing macrocore sampling under direct supervision of **R.E.A.**

R.E.A.'s field personnel screened soil samples from each soil boring for the possible presence of volatile organic compounds (VOCs) using a Photovac PE2020 Pro Plus portable PID. The PID was calibrated with an isobutylene standard gas to a benzene reference on the day of the drilling.

After installation of the monitoring wells, **R.E.A.** surveyed the locations of each well in relation to the existing monitoring wells, site features and roadways. Additionally, locations of relevant site features such as the drain outfall, drain cleanouts and house features were included in the survey. Each well was located in azimuth to an accuracy of ± 1.0 feet, and in elevation with an accuracy of ± 0.01 feet relative to an on-site benchmark of 100.00 feet.

2.5 Ground Water Elevations and Flow Direction

On 28 January 2009, groundwater flow in the unconfined surficial aquifer at the site was toward the north-northwest, with an estimated hydraulic gradient of approximately six percent. Compared to the previous sampling event in August of 2008, groundwater flow at the site showed a change in direction from a generally northeast direction to a general northwest direction. This change can be attributed to the installation of additional data points (additional monitoring wells), which were installed to better characterize groundwater flow and the limits of the contouring software used to delineate groundwater flow. Water-level measurements and elevation calculations are presented in **Table 4**, Appendix A, and the ground-water contour map prepared using this data is presented as **Figure 4**, Appendix A.

Static water-table elevations were computed for each monitoring well by subtracting the corrected or measured depth-to-water readings from the surveyed top-of-casing (TOC) elevations, which are relative to an arbitrary site datum of 100.00 feet (MW-1).

2.6 Ground Water Sampling and Analysis

At this time, petroleum contamination appears to be limited to the immediate vicinity of the spill area/basement interior. No VOCs or TPHs were detected in the samples collected from any of the on-site monitoring wells during the January 2009 sampling event; however, based on water quality data from the previous sampling event, it appears that groundwater in the immediate vicinity of the initial spill area and the basement bulkhead has been impacted by low concentrations of petroleum contamination.

None of the Vermont Groundwater Enforcement Standards (VGESs) ¹ for volatile petroleum compounds were exceeded in any of the groundwater samples collected during this sampling event. No petroleum compounds or total petroleum hydrocarbons (TPH) were detected above laboratory detection limits from the groundwater samples collected from (MW-3, MW-5, MW-6 and MW-7).

No petroleum compounds were detected in the trip-blank sample, and the duplicate sample results (MW-6) were within acceptable limits of the original. The analytical results are summarized on **Table 5** (Appendix A), and copies of the laboratory analytical reports are included as Appendix D.

Prior to sample collection, **R.E.A** field personnel measured the water level in each monitoring well and purged approximately three to five standing volumes of water from each well. All of the groundwater samples were collected using a peristaltic pump and dedicated clear flexible tubing. Groundwater was collected directly into 40-milliliter glass vials with Teflon®-lined septum lids. Each sample vial was preserved with hydrochloric acid to reduce the pH to less than 2 standard units.

Immediately after sample collection, field measurements were obtained for pH, specific conductivity, temperature, total dissolved solids (TDS), and oxygen reduction potential (ORP). A summary of the field measurement data is included on **Table 6**, in Appendix A.

On 28 January 2009, groundwater samples were collected from four monitoring wells (MW-3, MW-5, MW-6 and MW-7). Monitoring wells MW-1, MW-2 and MW-4 were not sampled during this sampling event (January 2009) due to no/low water in MW-2 and MW-4 and site conditions due to

¹The Vermont DEC has established groundwater enforcement standards for several petroleum related VOCs, as follows: benzene - 5 µg/L; toluene - 1,000 µg/L; ethylbenzene - 700 µg/L; xylenes - 10,000 µg/L; MTBE - 40 µg/L; naphthalene – 20 µg/L and 1,3,5-trimethyl benzene & 1,2,4-trimethyl benzene – 350 µg/L combined.

heavy snow ice (MW-1) All groundwater samples were analyzed for the possible presence of volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH) in accordance with U.S. EPA Methods 8021B, and 8015 DRO (diesel-range organics), respectively. All samples were transported under chain-of-custody in an ice-filled cooler to AMRO Environmental Laboratories, Corp. of Merrimack, New Hampshire for laboratory analysis.

2.7 Supply Well Sampling and Analysis

No volatile organic compounds (VOCs) were detected in the drinking water sample collected from the on-site supply well, which is supplied by the bedrock well located approximately 100 feet northeast of the spill area and residence. These results confirm previous findings from May and August 2008, which indicated that the on-site supply well has not been impacted by the spill.

On 29 January 2009 **R.E.A.** collected a drinking water sample from cold water plumbing at the kitchen faucet. The sample was collected after allowing the water to run for at least ten minutes. The sample was analyzed for the possible presence of volatile organic compounds in accordance with EPA Method 524.2. The sample was transported under chain-of-custody in an ice-filled cooler to Amro Environmental Laboratories Corp. of Merrimack, NH. Copies of the laboratory analytical reports are located in Appendix D.

According to the Well Completion Report submitted to the Vermont Water Supply Division, the drilled well (tag #26476) is comprised of a six-inch diameter steel casing that extends through the overburden into bedrock which was encountered at 42 feet bgs. The casing extends approximately 40 feet into bedrock. The total depth of the well is 360 feet. The well was drilled in September 2003 by H A Manosh Corp. (License # 256), and had an estimated yield of 1.5 gallons per minute during a one hour test.

2.8 Indoor Residual Odor Remediation

On 9 March 2009, **R.E.A.** provided oversight during the interior cleaning of the residence and application of Biosolve™ to the basement floor and impacted floor expansion joint by Restoration Unlimited Inc. of Newport, VT. Prior to the indoor cleaning, **R.E.A.** personnel conducted an indoor air screening (including the expansion joint) with a PID. Results of the initial screening and subsequent follow up screenings are included on **Table 7** in Appendix A. In general, average PID

readings of indoor air and air from within the expansion joint in the basement have shown a trend in decline since the interior cleaning and application of Biosolve™. Periodic screenings of the eastern floor expansion joint throughout the life of the project, both preceding and following the cleaning of the floor, have indicated no elevated levels of VOCs (0.0 ppm). A 6% Biosolve™/water solution was mixed and generously applied with a mop to the western side of the concrete basement floor (spill area) and expansion joint crack. This same mixture was applied to the eastern side of the concrete floor with an industrial sprayer. All loose basement contents were placed on top of the larger furniture items and all items that came in contact with the floor were wiped down with the solution. The Biosolve™/water solution was used on the concrete blocks holding up the furnace and hot water heater and was also applied approximately 12-18” up the side of the basement walls. Loose basement and first floor contents and surfaces were also wiped down with Buckeye Blue™ all purpose, water based cleaner. Wood floors located on the first floor and the basement stairs were cleaned with Murphy’s Oil™. Rugs and furniture upholstery located throughout the upstairs of the residence were shampoo washed. Vaportek VaporSHARK™ industrial odor control system was utilized on the first floor of the residence to neutralize impregnated petroleum odors.

On 17 March 2009, Based on field observations and findings during follow up indoor air screenings *R.E.A.* personnel administered a second application of the Biosolve™ solution directly to the expansion joint crack. PID readings of a ambient air and air within the expansion joint seemed to rise slightly immediately following the second application but overall the general trend shows a decrease of PID readings and petroleum vapors throughout all locations inside the Clegg residence. A detailed table with results and locations of the indoor air screening is located on **Table 7** in Appendix A.

2.9 Investigation Procedures

The procedures used during the supplemental site investigation at the Clegg Residence are consistent with the following guidance documents:

- *“Underground Storage Tank Closure and Site Assessment Requirements.”* Vermont Agency of Natural Resources, Waste Management Division. June 2003.
- *“Site Investigation Guidance.”* Vermont Agency of Natural Resources, Waste Management Division. June 2005.
- *“Corrective Action Guidance.”* Vermont Agency of Natural Resources, Waste Management Division. November 1997.
- *“Agency Guidelines for Petroleum Contaminated Soil and Debris.”* Vermont Agency of Natural Resources, Waste Management Division. August 1996.

- ASTM D 2488-06. *“Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).”* American Society for Testing and Materials.
- ASTM D 5092-04e1. *“Standard Practice for Design and Installation of Ground Water Monitoring Wells in Aquifers.”* American Society for Testing and Materials.
- ASTM D 4750-87 (2001). *“Standard Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well.”* American Society for Testing and Materials.
- ASTM D 4448-01(2007). *“Standard Guide for Sampling Ground Water Monitoring Wells.”* American Society for Testing and Materials.

3.0 DATA EVALUATION AND CONCEPTUAL MODEL

Information collected during the Supplemental Site Investigation indicates that the shallow overburden groundwater formation at the site has been threatened by the petroleum release. However, none of the Vermont Groundwater Enforcement Standards or laboratory method detection limits were exceeded in groundwater samples collected from the onsite monitoring wells during the SSI. Information collected during the ISI indicates that groundwater beneath the site has been impacted by low concentrations of petroleum compounds; however, no Vermont Groundwater Enforcement Standards (VGESs) were exceeded from any of the groundwater samples collected at the site during the ISI. Low concentrations of volatile organic compounds (VOCs) were detected in the groundwater sample collected from MW-4, which was installed on the opposing side of the basement wall where the AST spill occurred. Based on available information, low concentrations of migrating petroleum vapors from beneath the concrete basement floor have been neutralized during the interior cleaning and Biosolve™ application, however; the potential for future impacts to indoor air continues to exist while any preferential pathways (expansion joint) remain open to the air. Laboratory analysis indicates that the on-site drinking water supply, which is located within 100 feet of the release area, has not been impacted by petroleum contamination. No VOCs were detected in the water sample collected from the supply well in May and August of 2008 and January of 2009. Groundwater flow direction appears to be cross gradient or 90 degrees from the axis of the supply well and release area. No other receptors appear to be impacted.

Based on available information, active remediation is not likely to be required by the VT DEC at this time; however, follow up monitoring of indoor air and installation of a small temporary SVE system should be implemented as a precautionary measure.

A summary of the significant findings of the SSI is outlined below:

- No volatile petroleum compounds or TPH were detected in any of the samples collected from the on-site monitoring wells (MW-3, MW-5, MW-6 and MW-7) during the January 2009 sampling event.
- Refusal, presumably at the top of bedrock, was encountered at approximately 13-15 feet below ground surface during the soil boring program.
- Groundwater flow in the unconfined surficial aquifer at the site was toward the north-northwest, with an estimated hydraulic gradient of approximately six percent. Compared to the previous sampling event in August of 2008, groundwater flow at the site showed a change in direction from a generally northeast direction to a general northwest direction. This change can be attributed to the installation of three additional monitoring wells, which were installed to better characterize groundwater flow.
- Subsurface soils at the base of the footer and vicinity of the bulk head/west foundation wall appear to be impacted by low concentrations of residual petroleum contamination. Migration of fuel oil from the release area within the basement to the soils on the exterior of the residence may be attributed to oil migration from the release area on the basement floor through the seams of the floor and wall interface at the northwest corner of the building.
- Photo-ionization detector (PID) readings on soil samples collected from the vicinity of the foundation drain outfall were all 0.0 ppmv. Information and evidence obtained during the initial spill response in May of 2008, indicated the presence of petroleum contaminated soils at the base of the foundation drain outfall. The removal of approximately 0.6 cubic yards of PCS combined with the process of natural attenuation has greatly reduced the threat of petroleum contamination to soil and groundwater in this area. Biodegradation and dilution/dispersion may have aided in the attenuation of petroleum compounds in soils below the drain outfall.
- Average PID readings of indoor air and air from within the expansion joint in the basement have shown a trend in decline since the interior cleaning and application of Biosolve™; however, evidence suggests petroleum vapors continue to threaten the indoor air of the residence.

4.0 RECOMMENDATIONS

On the basis of the results of this investigation and the conclusions stated above, **R.E.A.** makes the following recommendations.

1. Based on the two consecutive groundwater sampling events showing no exceedance of VGES's for petroleum compounds; the on-site monitoring wells should be closed in accordance with VT DEC guidelines.

2. The basement should be evaluated for potential vapor intrusion. All potential vapor pathways should be identified and sealed to reduce the risk of vapor intrusion from residual petroleum contamination located beneath the slab. Specifically, the expansion joint crack on the west side of the basement floor should be sealed with a VOC compliant self leveling professional grade expansion joint sealant.
3. An additional soil vapor extraction point should be installed in the vicinity of the bulkhead. This new point along with the existing vapor extraction point should be linked to a small, temporary Soil Vapor Extraction (SVE) system to assist in remediating potential sub-slab/sub-surface vapors that are present in this area and to stimulate natural sub-surface bioremediation processes.
4. Site conditions should be evaluated with respect to petroleum odors. Bi-Monthly indoor odor inspections should be performed with specific focus on first floor ambient air, basement air and air in the vicinity of the western expansion joint and any other potential vapor pathways. During the bi-monthly odor checks, ambient air at these locations should be checked for the possible presence of petroleum odors and screened for the possible presence of VOC's with a PID.
5. A summary report should be completed following the installation of the soil vapor extraction system, which should include recommendations for continued vapor recovery, additional remediation activities or site closure.

5.0 LIMITATIONS

This report was completed by **Ross Environmental Associates, Inc. (R.E.A.)** for the sole use of Mr. John Clegg and Peerless Insurance in connection with an assessment of on-site environmental conditions. Use of this report by any other person or for any other use is not authorized except with prior written consent of **R.E.A.**, Mr. Clegg or Peerless Insurance.

The work was undertaken to assess environmental conditions specifically on the subject property in accordance with generally accepted engineering and hydrogeological practices. No other warranty, express or implied, is made. Absolute assurance that any and all possible contamination at the site was identified cannot be provided.

The report conclusions are based, in part, on information provided by the client, their agents, or third parties, including state or local officials. **R.E.A.** assumes no responsibility for the accuracy and completeness of the information. Where visual observations are included in the report, they represent conditions at the time of the inspection, and may not be indicative of past or future site conditions.

6.0 REFERENCES

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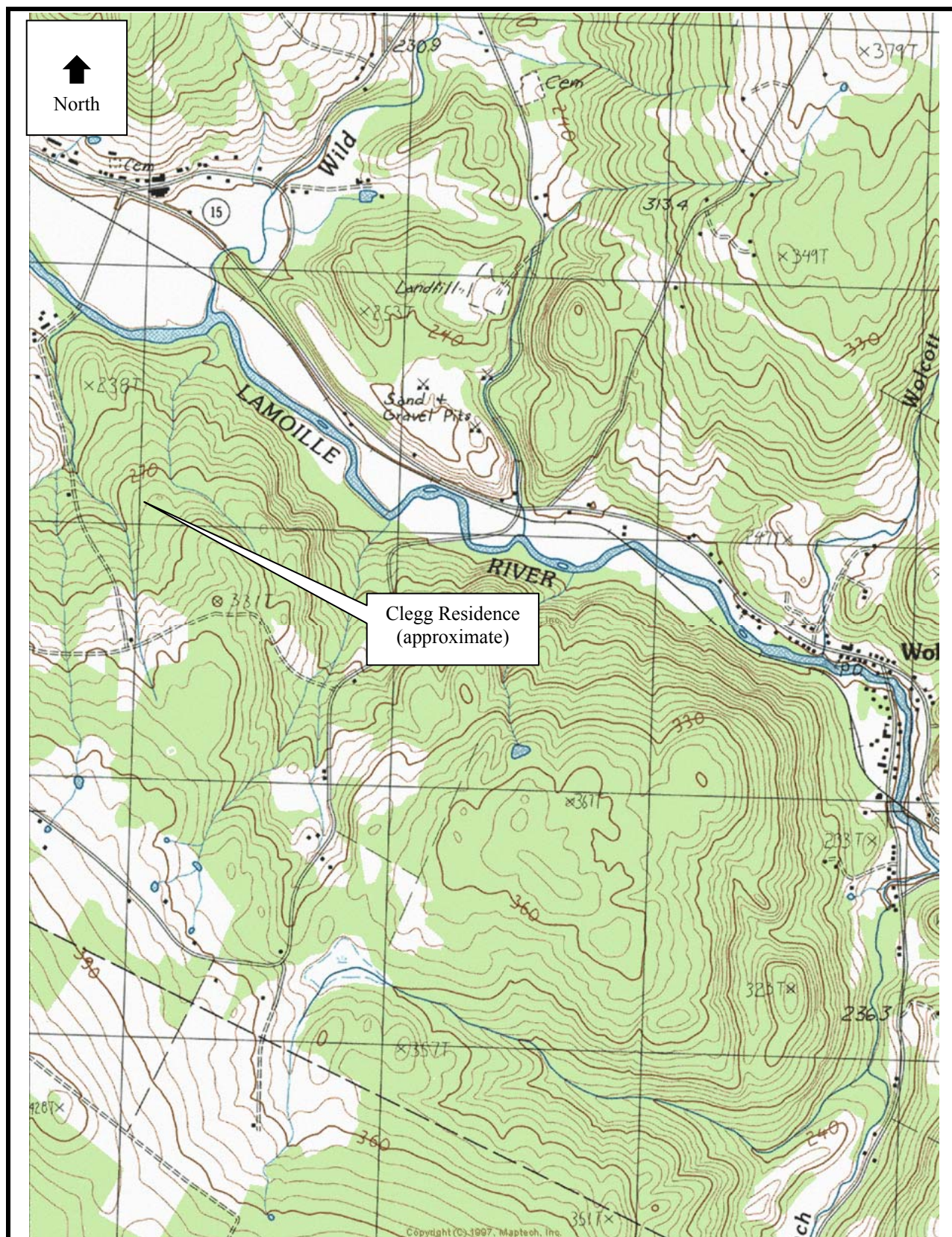
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FIGURES AND TABLES



Approximate Scale: 1 inch = 1,200 feet

Site Coordinates: 44° 33' 17.55" N, 72° 29' 80.60" W

Source: USGS 1986. Wolcott Quadrangle, VT.
Topographic map (7.5 minute series).
Provisional Edition 1986. Maptech, Inc. 1998.
R.E.A. Project No. 28-050

Figure 1
Site Location Map
Clegg Residence
Wolcott, Vermont



Site Coordinates: 44° 33' 17.55" N 72 ° 29' 80.60" W

Legend

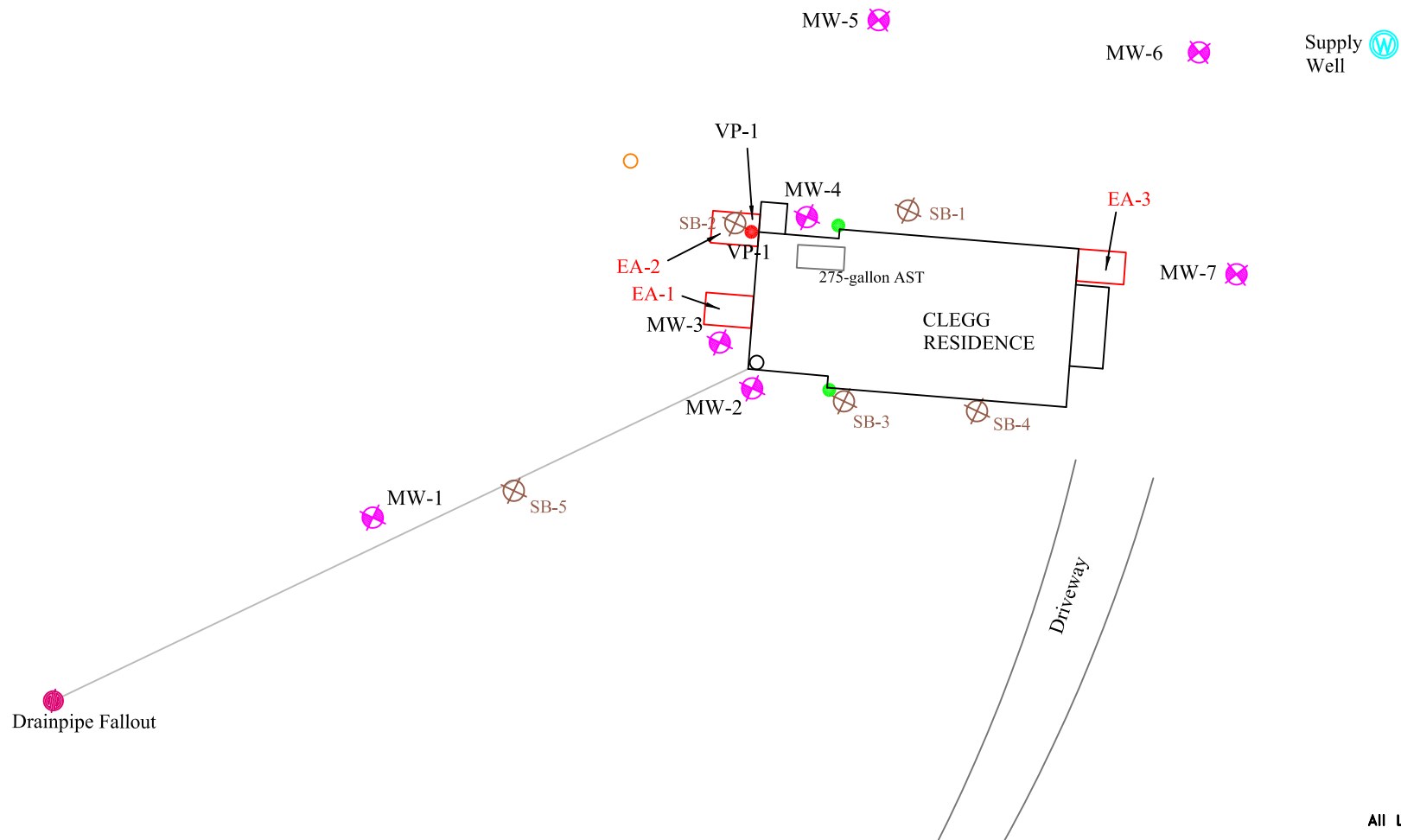
- Private Wells
- Roads

Aerial Photo: NAIP 2003

Private Well Data: Extracted and downloaded from the State of Vermont ANR Well Locator.
http://maps.vermont.gov/imf/sites/ANR_WSWelldriller/jsp/launch.jsp

Figure 2
Private Wells within 1,000 Foot Radius
Clegg Residence
Wolcott, Vermont

F:\Projects\28050\PDFs\Figure 2.pdf
F:\Projects\28050\GIS_Wells\Map.mxd



All Locations are Approximate

Scale 1" = 30'

Date 15 January 2009

File Name 28-050

Drawn By MBM

Legend.

- Monitoring Well Location
- Soil Boring Location
- Supply Well Location
- Septic Tank Cover
- Drainpipe Outfall
- Vapor Point
- Top of Perimeter Drainpipe
- EA Approximate Excavation Area

FIGURE 3.

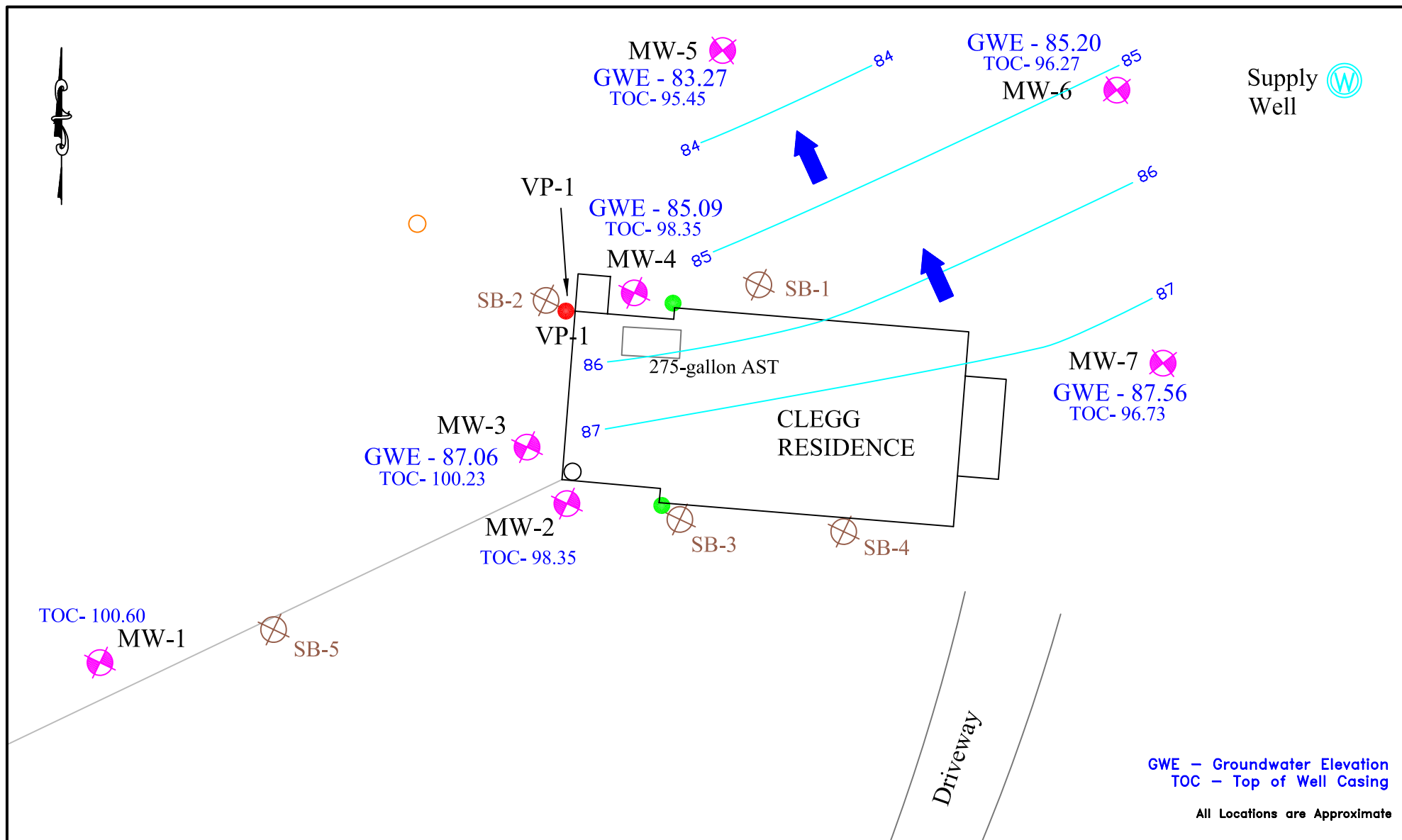
SITE PLAN

(with monitoring well locations)

Clegg Residence
Wolcott, Vermont



Ross Environmental Associates, Inc.
P.O. Box 1533 Stowe, Vt 05672
(802) 253-4280



Scale: 1" = 20'	Date: 15 January 2009	Legend: <ul style="list-style-type: none"> Monitoring Well Location Soil Boring Location Supply Well Location Septic Tank Cover Drainpipe Outfall Vapor Point Top of Perimeter Drainpipe 	<p>FIGURE 4. GROUNDWATER CONTOUR MAP (Monitoring Date: 28 January 2009)</p> <p>Clegg Residence Wolcott, Vermont</p>
File Name: 28-050	Drawn By: MBM		
 <p>Ross Environmental Associates, Inc. P.O. Box 1533 Stowe, Vt 05672 (802) 253-4280</p>			

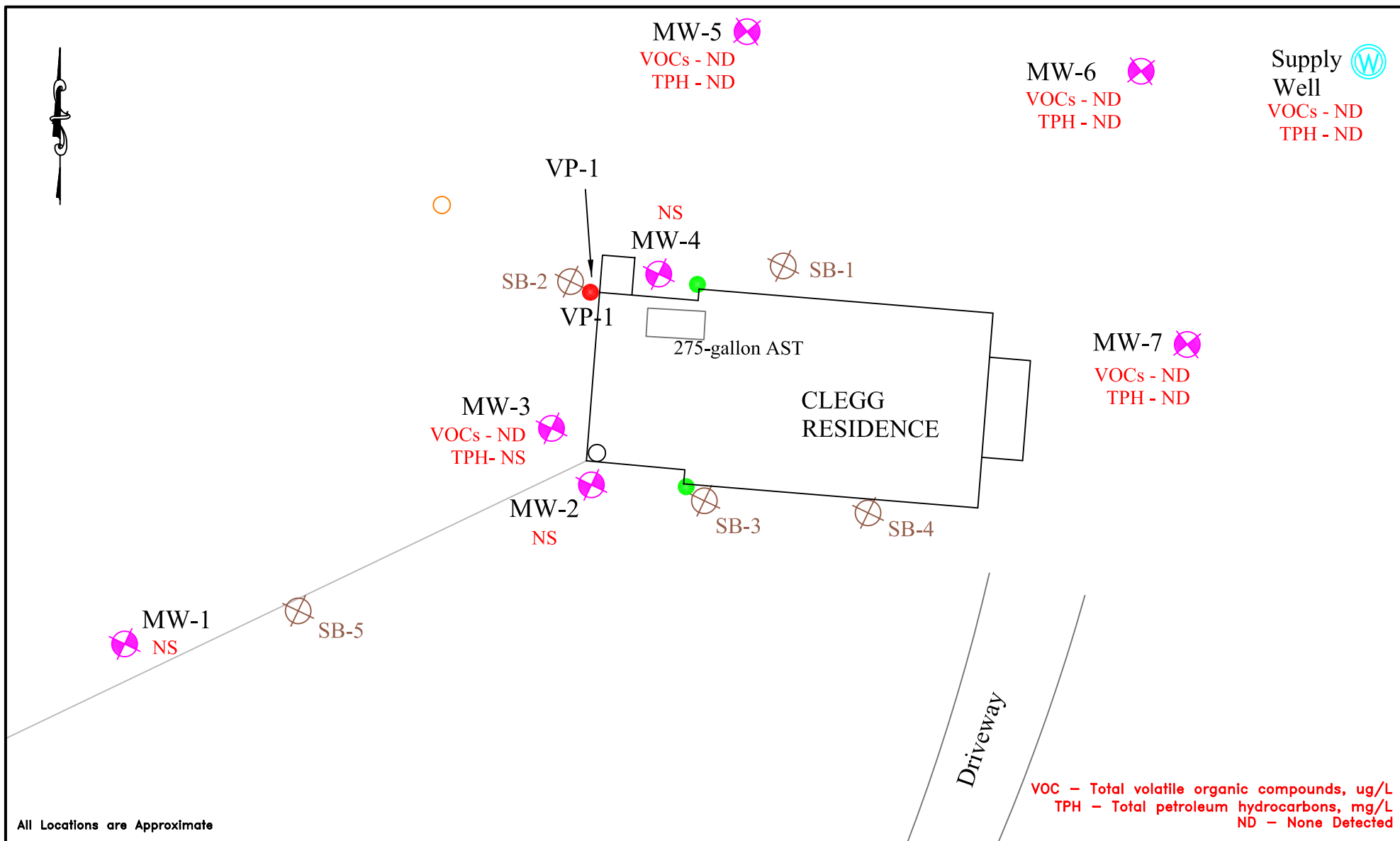


FIGURE 5.
CONTAMINANT DISTRIBUTION
 (Monitoring Date: 28 January 2009)

Clegg Residence
 Wolcott, Vermont

TABLE 1
Contaminants of Concern

Clegg Residence
Wolcott, Vermont

Parameter	CASN	EPA MCL (ug/L)	VGES (ug/L)	WQC (ug/L)	EPA Region IX PRGs - soil		density (g/cm ³) @ 20/4 °C	log K _{oc}	log K _{ow}	water solubility (mg/L)
					residential	Industrial				
Benzene	71-43-2	5.0	5.0	1.2	0.60	1.3	0.8789	1.69	2.13	1,820 @ 22 °C
Toluene	108-88-3	1,000	1,000	6,800	520	520	0.8669	2.06	2.65	519.5 @ 25 °C
Ethylbenzene	100-41-4	700	700	3,100	8.9	20	0.8670	2.22	3.13	187 @ 25 °C
Total Xylenes	95-47-6	10,000	10,000	--	270	420	0.8802	2.11	3.13	152 @ 20 °C
1,3,5-trimethylbenzene	526-73-8	--	350	--	21	70	0.8944	2.80	3.55	75.2 mg/kg @ 25°C
1,2,4-trimethylbenzene	95-63-6	--		--	52	170	0.8758	3.57	3.65	51.9 mg/kg @ 25 °C
Naphthalene	91-20-3	--	20	--	56	190	1.145	2.74	3.40	31.7 @ 25°C

Montgomery, J.H., 2000. "Groundwater Chemicals - Desk Reference" Third Edition. Lewis Publishers, Boca Raton, Florida.

EPA MCL. U.S. Environmental Protection Agency - Maximum Contaminant Level. In micrograms per liter (ug/L).

Vermont Groundwater Enforcement Standards (VGESs). In micrograms per liter (ug/L).

Vermont Water Quality Criteria (WQC) for the protection of human health in Class B waters. In micrograms per liter (ug/L).

PRG - U.S. EPA Region 9 Preliminary Remediation Goals (PRG) for soil. In milligrams per kilogram (mg/Kg)

Soil sorption coefficient, log K_{oc}

Octanol/water partition coefficient, log K_{ow}

TABLE 2
Summary of PID Readings
Supplemental Site Investigation
Clegg Residence
729 Corley Road
Wolcott, Vermont

Monitoring Date: 16 & 17 December 2008

Excavation Area-1 (EA-1)

Sample ID	Depth (Feet,bg)	PID Reading (ppmv)	Location/comments
Beneath Foundation drain	6.0	0.0	fine silty sands
top of footer	7.0	0.0	fine silty sands, width of footer = 3.0'
bottom of footer	8.0	0.0	fine silty sands, width of footer = 3.0'
Horizontal boring	8.0	0.0	fine silty sands below footer/floor approx. 3.0' in from outside edge of wall
Horizontal boring	8.0	0.0	air beneath footer/floor
AVERAGE		0.0	

Excavation Area-2 (EA-2)

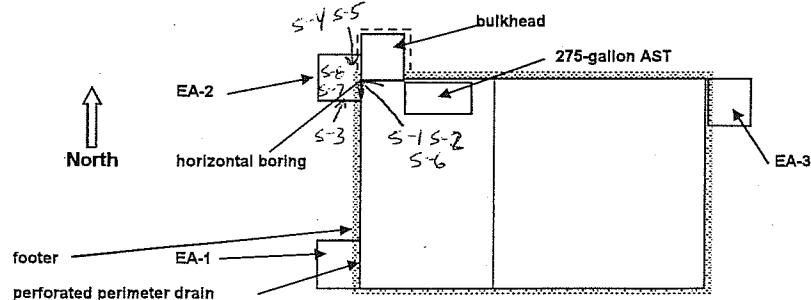
Sample ID	Depth (Feet,bg)	PID Reading (ppmv)	Location/comments
below septic line	0.5	0.0	medium borwn sand, some cobble
S-1	6.0	2.9	soils at foundation wall/bulkhead interface seam
S-2	5.0	1.5	soils adjacent to wall
S-3	6.0	0.0	soils south of wall/bulkhead seam
S-4	5.5	4.9	soils north of wall/bulkhead seam
S-5	5.5	0.0	soils north of wall/bulkhead seam
S-6	6.0	30.9	soil adajent to wall/footer
S-7	6.0	53.8	soils beneath drain pipe
S-8	6.0	0.0	soils 3.0' west of wall
Perimeter Pipe	6.0	0.3	air within perforated drain pipe
Horizontal boring	8.0	1.3	fine silty sands below footer/floor approx. 2.0' in from outside edge of wall
AVERAGE		8.7	

Excavation Area-3 (EA-3)

Sample ID	Depth (Feet,bg)	PID Reading (ppmv)	Location/comments
Beneath Foundation drain	5.0	0.0	medium borwn sand, some cobble
top of footer	6.0	0.0	fine silty sands,
bottom of footer	7.0	0.0	fine silty sands, groundwater prsent at top of footer
AVERAGE		0.0	

PID = photoionization detector, Phocek

ppmv = parts per million volume, bg = below grade



Not to Scale. All locations Approximate.

TABLE 3

Summary of PID Readings
 Supplemental Site Investigation
 Clegg Residence
 729 Corley Road
 Wolcott, Vermont

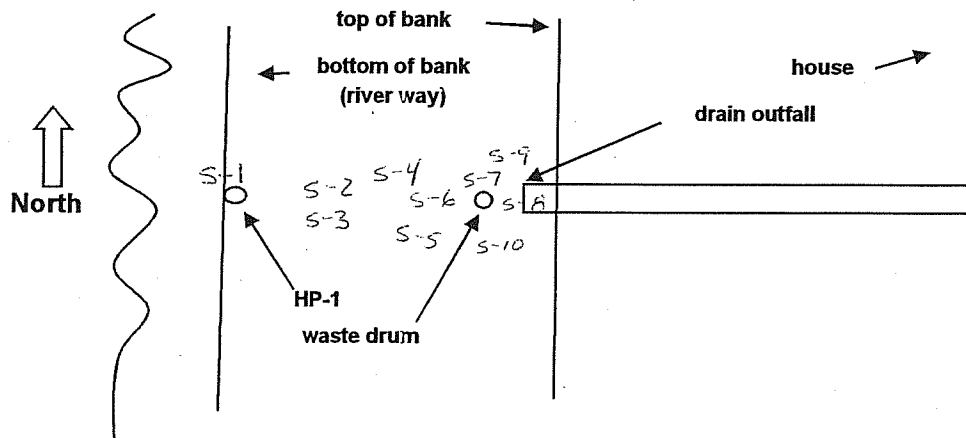
Monitoring Date: 16 & 17 December 2008

Drain Outfall Soil Screening

Sample ID	Depth (Feet,bg)	PID Reading (ppmv)	Location/comments
S-1	2.5	0.0	soils at bottom of bank in line w/ pipe
S-2	3.0	0.0	soils below large stump
S-3	3.5	0.0	soils south of large stump
S-4	2.0	0.0	soils at mid bank
S-5	2.0	0.0	soils at mid bank
S-6	1.0	0.0	soils above stump below horizontal log
S-7	2.0	0.0	soils btwn log and waste drum
S-8	1.5	0.0	soil directly beneath outfall
S-9	2.0	0.0	soils just below waste drum to north
S-10	2.0	0.0	soils just below waste drum to south
AVERAGE		0.0	

PID = photoionization detector, Phochem

ppmv = parts per million volume, bg = below grade



Not to Scale. All locations Approximate.

TABLE 4
GROUND WATER ELEVATION CALCULATIONS

Clegg Residence
Wolcott, Vermont

Monitoring Date: 28 January 2009

Well I.D.	Top of Casing Elevation (ft)	Depth to Water (ft)	Water Table Elevation (ft)
MW-1	N/S	N/S	N/S
MW-2	N/S	N/S	N/S
MW-3	100.23	13.17	87.06
MW-4	98.35	13.26	85.09
MW-5	95.45	12.18	83.27
MW-6	96.27	11.07	85.20
MW-7	96.73	9.17	87.56

All values reported in feet relative to arbitrary site datum of 100.00 feet
NS: Not sampled due to lack of water, field conditions, etc

TABLE 5
GROUND-WATER ANALYTICAL RESULTS

Clegg Residence
Wolcott, Vermont

Monitoring Date: 28 January 2009

Parameter	VGES	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	Dup (MW-2)	% Difference	Trip Blank
MtBE	40	N/S	N/S	ND<1.0	N/S	ND<1.0	ND<1.0	ND<1.0	ND<1.0	---	ND<1.0
Benzene	5.0	N/S	N/S	ND<1.0	N/S	ND<1.0	ND<1.0	ND<1.0	ND<1.0	---	ND<1.0
Toluene	1,000	N/S	N/S	ND<1.0	N/S	ND<1.0	ND<1.0	ND<2.0	ND<1.0	---	ND<1.0
Ethylbenzene	700	N/S	N/S	ND<1.0	N/S	ND<1.0	ND<1.0	ND<1.0	ND<1.0	---	ND<1.0
Total Xylenes	10,000	N/S	N/S	ND<2.0	N/S	ND<2.0	ND<2.0	ND<2.0	ND<2.0	---	ND<2.0
1,3,5-trimethylbenzene	350	N/S	N/S	ND<1.0	N/S	ND<1.0	ND<1.0	ND<1.0	ND<1.0	---	ND<1.0
1,2,4-trimethylbenzene		N/S	N/S	ND<1.0	N/S	ND<1.0	ND<1.0	ND<1.0	ND<1.0	---	ND<1.0
Naphthalene	20	N/S	N/S	ND<1.0	N/S	ND<1.0	ND<2.0	ND<2.0	ND<2.0	---	ND<2.0
Total VOCs*	--	N/S	N/S	ND	N/S	ND	ND	ND	ND	---	ND
TPH (mg/L)	--	N/S	N/S	ND<0.40	N/S	ND<0.74	ND<0.58	ND<0.62	ND<0.58	---	ND<0.40

Notes: All results reported as micrograms per liter (ug/L), unless indicated otherwise.
 ND: None detected at indicated detection limit.
 NS: Not sampled due to lack of water, field conditions, etc
 Shaded values indicate exceedance of Vermont Groundwater Enforcement
 standard (VGES)
 TPH: Total Petroleum Hydrocarbons

TABLE 6
FIELD MEASUREMENT DATA

Clegg Residence
Wolcott, Vermont

Monitoring Date: 28 January 2009

Well ID	pH (su)	temperature (°C)	Specific conductivity (uS)	ORP (mV)	TDS (ppm)	Comments
MW-1	---					Not sampled due to ice/snow
MW-2	Dry					
MW-3	---					low water/not enough to sample
MW-4	---					low water/not enough to sample
MW-5	7.1	5.9	171	125	84	
MW-6	6.31	4.1	51	123	45	
MW-7	5.87	2.4	69	150	34	

pH reported in standard units (s.u.).

Specific conductivity reported in microsiemens (uS) or millisiemens (mS).

Oxidation-reduction potential (ORP) reported in millivolts (mV).

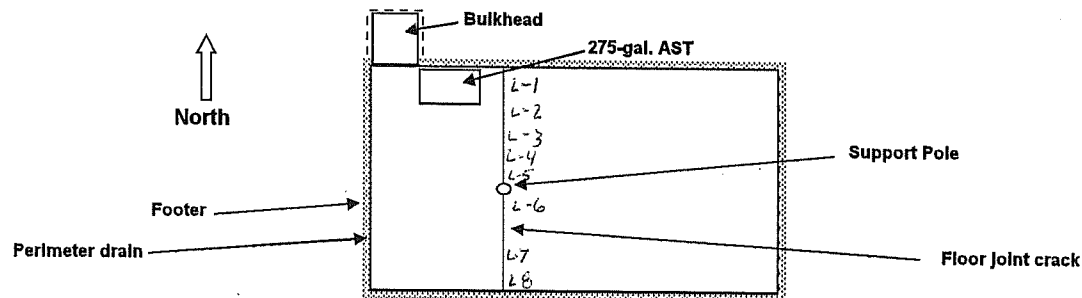
Total dissolved solids (TDS) reported in parts per million (ppm) or parts per (ppt) thousand.

PID = photoionization detector, reported in parts per million per volume (ppmv)

TABLE 7
Summary of PID Readings
Supplemental Site Investigation
Clegg Residence
729 Corley Road
Wolcott, Vermont
Monitoring Date: March 2009
Indoor air PID Readings

3/9/09 (before cleaning)		3/10/09 (after cleaning)		3/13/09 (after cleaning)		3/16/09 (after cleaning)		3/17/09 (before 2nd app.)		3/20/09 (after 2nd Biosolve app.)	
Location	PID Reading (ppmv)	Location	PID Reading (ppmv)	Location	PID Reading (ppmv)	Location	PID Reading (ppmv)	Location	PID Reading (ppmv)	Location	PID Reading (ppmv)
1st floor	0.0	1st floor	0.5	1st floor	0.5	1st floor	0.3	1st floor	0.5	1st floor	0.1
2nd floor	0.0	2nd floor	0.3	2nd floor	n/a	2nd floor	n/a	2nd floor	n/a	2nd floor	n/a
basement	1.0-1.5	basement	1.0	basement	1.0	basement	0.4	basement	1.0	basement	0.3
L-1 (crack)	17.8	L-1 (crack)	54.6	L-1 (crack)	58.2	L-1 (crack)	40.1	L-1 (crack)	32.6	L-1 (crack)	42.0
L-2 (crack)	98.9	L-2 (crack)	96.8	L-2 (crack)	68.8	L-2 (crack)	37.8	L-2 (crack)	125.0	L-2 (crack)	121.0
L-3 (crack)	133.0	L-3 (crack)	36.8	L-3 (crack)	63.4	L-3 (crack)	23.3	L-3 (crack)	34.9	L-3 (crack)	12.5
L-4 (crack)	189.0	L-4 (crack)	13.6	L-4 (crack)	30.6	L-4 (crack)	27.3	L-4 (crack)	n/a	L-4 (crack)	8.9
L-5 (crack)	97.3	L-5 (crack)	18.1	L-5 (crack)	10.5	L-5 (crack)	n/a	L-5 (crack)	n/a	L-5 (crack)	n/a
L-6 (crack)	54.6	L-6 (crack)	25.2	L-6 (crack)	8.5	L-6 (crack)	10.2	L-6 (crack)	18.1	L-6 (crack)	12.0
L-7 (crack)	9.6	L-7 (crack)	2.9	L-7 (crack)	1.3	L-7 (crack)	4.7	L-7 (crack)	n/a	L-7 (crack)	3.0
L-8 (crack)	4.6	L-8 (crack)	6.2	L-8 (crack)	0.9	L-8 (crack)	2.1	L-8 (crack)	0.0	L-8 (crack)	3.0
Vapor Point VP-1	0.0	Vapor Point VP-1	0.0	Vapor Point VP-1	0.0	Vapor Point VP-1	0.0	Vapor Point VP-1	0.0	Vapor Point VP-1	0.0
AVERAGE	50.4	AVERAGE	21.3	AVERAGE	20.3	AVERAGE	14.6	AVERAGE	26.5	AVERAGE	20.3

PID = photoionization detector, PhocheK
ppmv = parts per million volume, bg = below grade

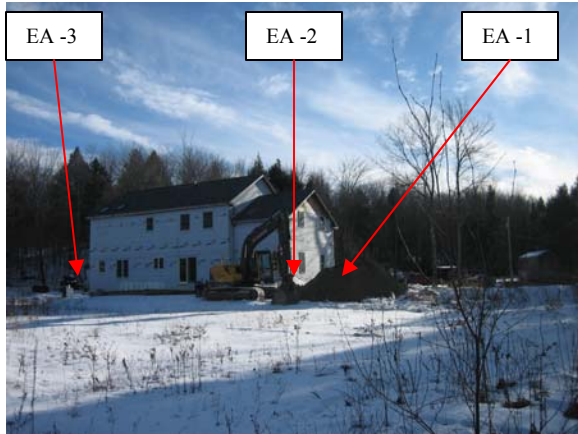


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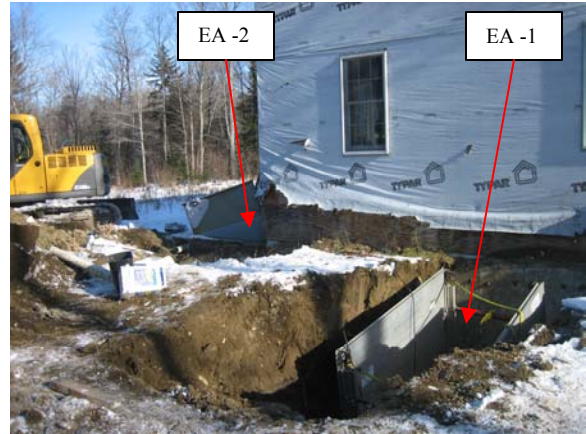
B**

SITE PHOTOGRAPHS

Clegg Residence - Wolcott, VT
Supplemental Site Investigation Winter 2008-2009



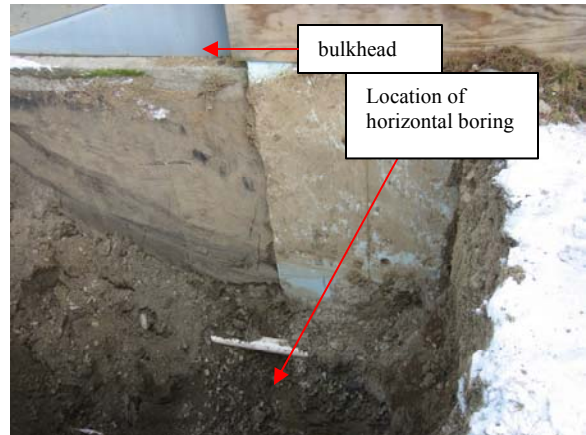
Photograph #1 – Overview of Site - view to southeast



Photograph #2 – Overview of Site - view to northeast



Photograph #3 - Installation of Excavation Area-1 (EA-1) - view to east



Photograph #4 - Installation of Excavation Area-2 (EA-2) - view to east



Photograph #5 - Installation of Vapor Point (VP-1) in EA-2 - view to south

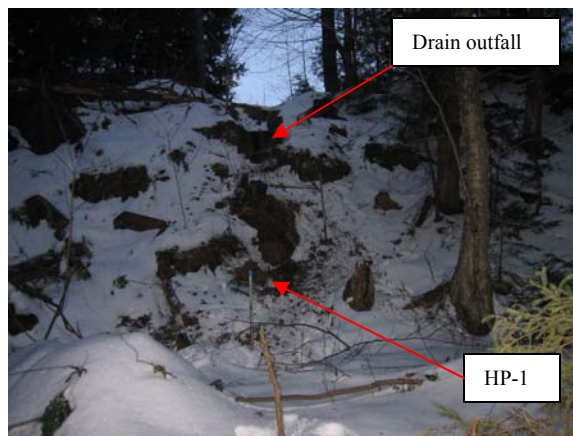


Photograph #6 - Installation of EA-3 - view to north

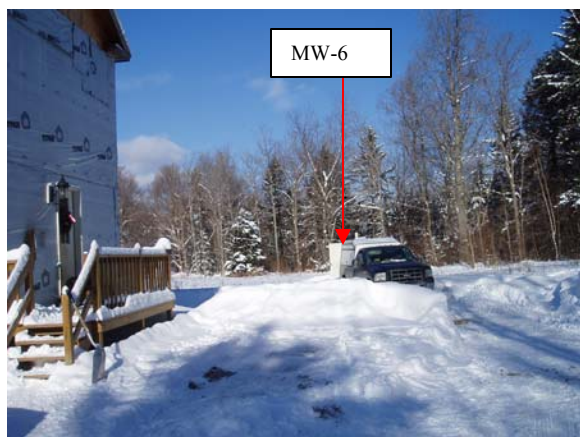
Clegg Residence - Wolcott, VT
Supplemental Site Investigation Winter 2008-2009



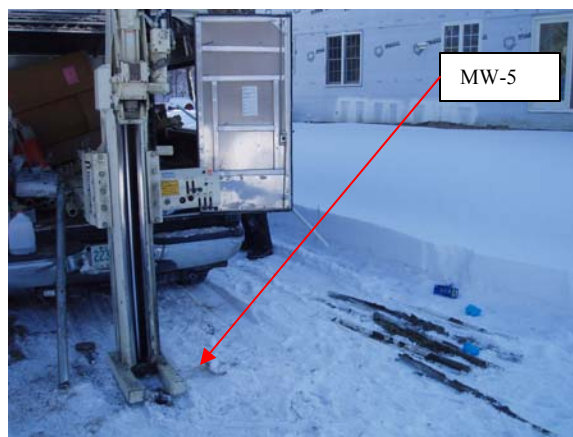
Photograph #7 - Installation of EA-3 - view to west



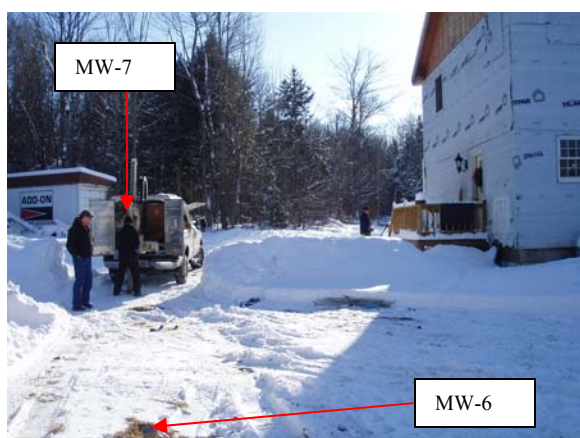
Photograph #8 - Screening of soils at foundation drain outfall - view to east



Photograph #9 - Installation of MW-6 - view to north



Photograph #10 - Installation of MW-5 - view to southeast



Photograph #11 - Installation of MW-4 - view to south





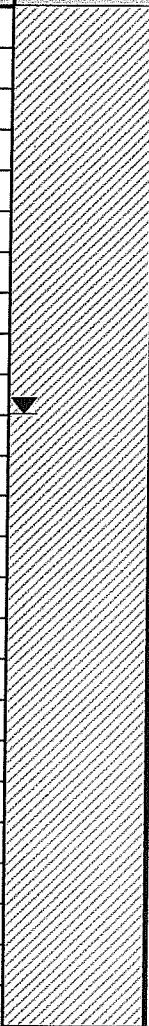



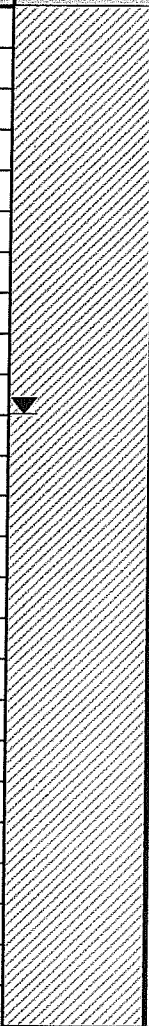



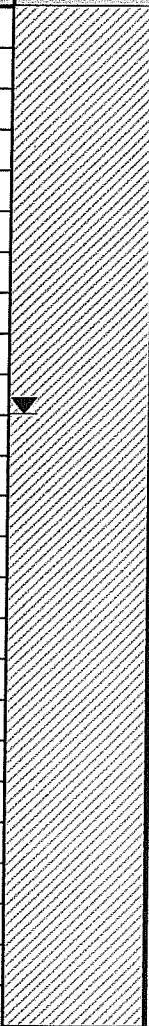

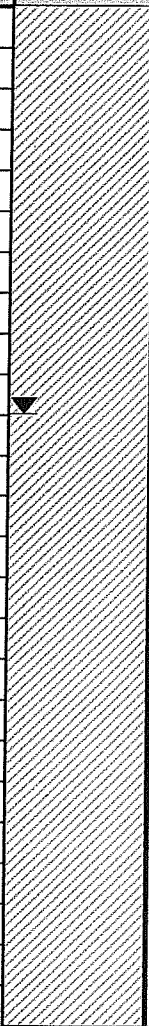
Photograph #12 - View of basement after cleaning and Biosolve application to crack - view to east


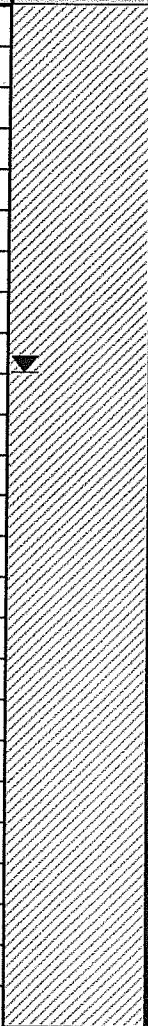







**SOIL BORING
MONITORING WELL LOGS**


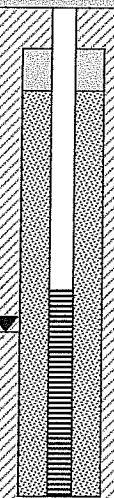







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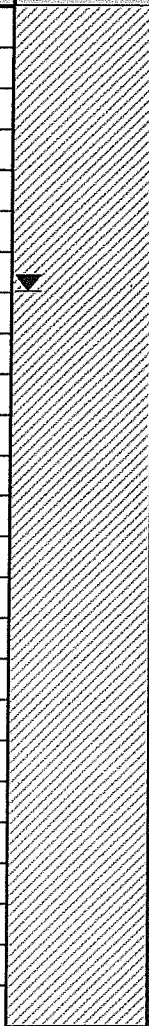






				BORING / WELL IDENTIFICATION: MW-1		
				Site Name: Clegg Residence		
				Site Location: Wolcott, Vermont		
Well Depth:	10.0'	Boring Depth:	11.5'	Installation Date: 29-Jul-08		
Depth to Water (during drilling):			5.0'	Job Number: 28-050		
Screen Diameter:	1"	Depth:	5.0-10.0'	REA Representative: Rose		
Screen Type/Size: 0.01' slotted schedule 40 PVC				Drilling Company: Atlantis		
Riser Diameter:	1"	Depth:	0-5.0'	Sampling Method: Geoprobe		
Riser Type/Size: Schedule 40 PVC				Reference Point (RP):		
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (in)	Sample Description / Notes	PID (ppm)	Well Profile	Legend
			organic matter, weathered rock, fine brown sand			Concrete
	0-4'	50%		0.0		Native Material
5			fine brown silty sand, some gravel			Bentonite
	4-8'	75%		0.0		Filter Sand
10			fine brown silty sand, some gravel. Well set at 11.5' due to rock refusal			Riser
	8-12'	25%		0.0		Screen
						Water Level
15						
20						
25						
PROPORTIONS USED			BLOW COUNT (COHESIVE SOILS)	BLOW COUNT (GRANULAR SOILS)	NOTES:	
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	miniRAE 2000
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE	
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE		


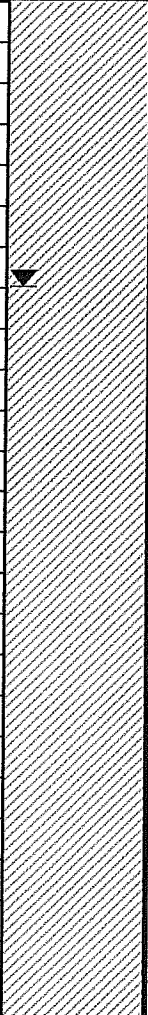







				BORING / WELL IDENTIFICATION: SB-1			
				Site Name: Clegg Residence			
				Site Location: Wolcott, Vermont			
Well Depth:	N/A	Boring Depth:	12.0'	Installation Date: 29-Jul-08			
Depth to Water (during drilling):			10.0'	Job Number: 28-050			
Screen Diameter:	N/A	Depth:	N/A	REA Representative: Rose			
Screen Type/Size:		N/A		Drilling Company: Atlantis			
Riser Diameter:	N/A	Depth:	N/A	Sampling Method: Geoprobe			
Riser Type/Size:		N/A		Reference Point (RP):			
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (in)	Sample Description / Notes	PID (ppm)	Well Profile	Legend	
			fine to medium brown sand			 Concrete	
							 Native Material
							 Bentonite
5	0-4'	100%	fine to medium brown sand some gravel, gray schist@ 7.0'	0.0		 Filter Sand	
							 Riser
							 Screen
	4-8'	100%	medium brown sand with some gravel wet brown silt	0.0		 Water Level	
10							
	8-12'	100%		0.0			
15							
20							
25							
PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:	
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	miniRAE 2000	
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE		
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE			


				BORING / WELL IDENTIFICATION: SB-2		
				Site Name: Clegg Residence		
				Site Location: Wolcott, Vermont		
Well Depth:	N/A	Boring Depth:	12.0'	Installation Date: 29-Jul-08		
Depth to Water (during drilling):			8.5'	Job Number: 28-050		
Screen Diameter:	N/A	Depth:	N/A	REA Representative: Rose		
Screen Type/Size:	N/A			Drilling Company: Atlantis		
Riser Diameter:	N/A	Depth:	N/A	Sampling Method: Geoprobe		
Riser Type/Size:	N/A			Reference Point (RP):		
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (in)	Sample Description / Notes	PID (ppm)	Well Profile	Legend
			organic matter, fine to medium brown sand			 Concrete
						 Native Material
	0-4'	25%		0.0		 Bentonite
5			fine to medium brown sand some gravel			 Filter Sand
	4-8'	50%		0.0		 Riser
			wet brown silt			 Screen
10						 Water Level
	8-12'	100%		0.0		
15						
20						
25						
PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	miniRAE 2000
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE	
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE		


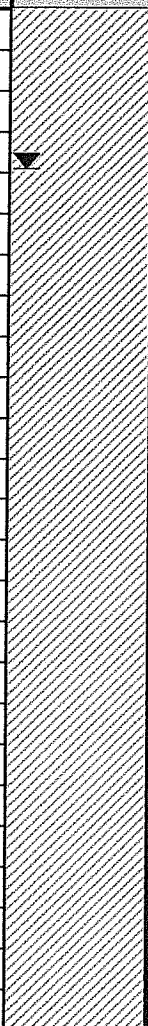







				BORING / WELL IDENTIFICATION: MW-2		
				Site Name:	Clegg Residence	
				Site Location:	Wolcott, Vermont	
Well Depth:	12.0'	Boring Depth:	12.0'	Installation Date:	29-Jul-08	
Depth to Water (during drilling):			8.0'	Job Number:	28-050	
Screen Diameter:	1"	Depth:	7.0-12.0'	REA Representative:	Rose	
Screen Type/Size:	0.01' slotted schedule 40 PVC			Drilling Company:	Atlantis	
Riser Diameter:	1"	Depth:	0-7.0'	Sampling Method:	Geoprobe	
Riser Type/Size:	Schedule 40 PVC			Reference Point (RP):		
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (in)	Sample Description / Notes	PID (ppm)	Well Profile	Legend
			medium brown sand			 Concrete
						 Native Material
	0-4'	50%	gray schist rock some silt	0.0		 Bentonite
5						 Filter Sand
			silty sand some gravel			 Riser
	4-8'	50% ▼		0.0		 Screen
			medium brown sand			 Water Level
10			silty sand some clay. Well set at 12.0' bgs due to refusal			
	8-12'	100%		0.0		
15						
20						
25						
PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	miniRAE 2000
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE	
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE		


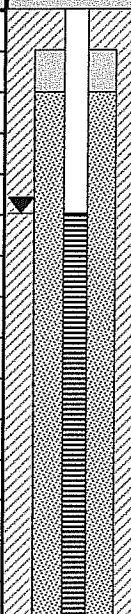







				BORING / WELL IDENTIFICATION: MW-3		
				Site Name: Clegg Residence		
				Site Location: Wolcott, Vermont		
Well Depth:	14.0'	Boring Depth:	14.0'	Installation Date: 29-Jul-08		
Depth to Water (during drilling):				8.0'		
Screen Diameter:	1"	Depth:	9.0-14.0'	Job Number: 28-050		
Screen Type/Size: 0.01' slotted schedule 40 PVC				REA Representative: Rose		
Riser Diameter:	1"	Depth:	0-9.0'	Drilling Company: Atlantis		
Riser Type/Size: Schedule 40 PVC				Sampling Method: Geoprobe		
				Reference Point (RP):		
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (in)	Sample Description / Notes	PID (ppm)	Well Profile	Legend
			fine to medium brown sand			Concrete
						Native Material
	0-4'	25%		0.0		Bentonite
5			wet brown silt			Filter Sand
						Riser
	4-8'	50%	brown silt, some gravel	0.0		Screen
						Water Level
10			wet brown silt			
	8-12'	100%		0.0		
	12-14'	100%	wet brown silt. Well set at 14.0' bgs due to refusal	0.0		
15						
20						
25						
PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	miniRAE 2000
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE	
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE		


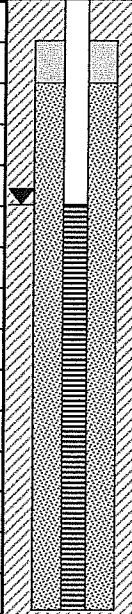






				BORING / WELL IDENTIFICATION: SB-3		
				Site Name: Clegg Residence		
				Site Location: Wolcott, Vermont		
Well Depth:	N/A	Boring Depth:	12.0'	Installation Date: 29-Jul-08		
Depth to Water (during drilling):			7.0'	Job Number: 28-050		
Screen Diameter:	N/A	Depth:	N/A	REA Representative: Rose		
Screen Type/Size:			N/A	Drilling Company: Atlantis		
Riser Diameter:	N/A	Depth:	N/A	Sampling Method: Geoprobe		
Riser Type/Size:			N/A	Reference Point (RP):		
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (in)	Sample Description / Notes	PID (ppm)	Well Profile	Legend
			no recovery			 Concrete
						 Native Material
	0-4'	0%		0.0		 Bentonite
5			fine to medium brown sand some gravel, silty clay at 8.0'			 Filter Sand
	4-8'	50%				0.0
			wet brown silt			 Screen
10			medium brown/gray sand			 Water Level
	8-12'	100%				0.0
15						
20						
25						
PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	miniRAE 2000
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE	
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE		


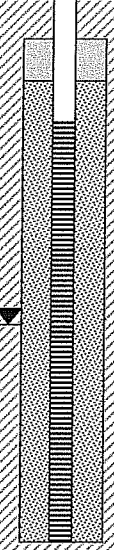







				BORING / WELL IDENTIFICATION: SB-4			
				Site Name: Clegg Residence			
				Site Location: Wolcott, Vermont			
Well Depth:	N/A	Boring Depth:	9.0'	Installation Date: 29-Jul-08			
Depth to Water (during drilling):			7.0'	Job Number: 28-050			
Screen Diameter:	N/A	Depth:	N/A	REA Representative: Rose			
Screen Type/Size:			N/A	Drilling Company: Atlantis			
Riser Diameter:	N/A	Depth:	N/A	Sampling Method: Geoprobe			
Riser Type/Size:			N/A	Reference Point (RP):			
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (in)	Sample Description / Notes	PID (ppm)	Well Profile	Legend	
			medium brown sand, some gravel, weathered rock at 3.0'			 Concrete	
	0-4'	50%		0.0		 Native Material	
5			medium brown sand, some gravel, weathered rock at 7.0'			 Bentonite	
	4-8'	75%		0.0		 Filter Sand	
10			medium brown sand some gravel. Rock refusal at 9.0'			 Riser	
	8-12'	25%		0.0		 Screen	
15						 Water Level	
20							
25							
PROPORTIONS USED			BLOW COUNT (COHESIVE SOILS)	BLOW COUNT (GRANULAR SOILS)		NOTES:	
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE		30-50 DENSE	miniRAE 2000
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE		
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE			

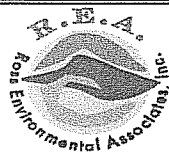
				BORING / WELL IDENTIFICATION: MW-4		
				Site Name: Clegg Residence		
				Site Location: Wolcott, Vermont		
Well Depth:	14.0'	Boring Depth:	14.0'	Installation Date: 29-Jul-08		
Depth to Water (during drilling):				8.0'		
Screen Diameter:	1"	Depth:	9.0-14.0'	Job Number: 28-050		
Screen Type/Size:	0.01' slotted schedule 40 PVC			REA Representative: Rose		
Riser Diameter:	1"	Depth:	0-9.0'	Drilling Company: Atlantis		
Riser Type/Size:	Schedule 40 PVC			Sampling Method: Geoprobe		
				Reference Point (RP):		
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (in)	Sample Description / Notes	PID (ppm)	Well Profile	Legend
			fine to medium brown sand some gravel			Concrete
						Native Material
	0-4'	50%		0.0		Bentonite
5			fine to medium brown sand some gravel, gray schist@ 7.0'			Filter Sand
	4-8'	100% ▼		0.0		Riser
			fine brown sand			Screen
10			brown silt			Water Level
	8-12'	100%		0.0		
			medium brown sand some gravel			
	12-14'	100%	wet brown silt. Well set at 14.0' bgs due to refusal	0.0		
15						
20						
25						
PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	miniRAE 2000
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE	
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE		

				BORING / WELL IDENTIFICATION: SB-5			
				Site Name: Clegg Residence			
				Site Location: Wolcott, Vermont			
Well Depth:	N/A	Boring Depth:	10.0'	Installation Date: 29-Jul-08			
Depth to Water (during drilling):			4.0'	Job Number: 28-050			
Screen Diameter:	N/A	Depth:	N/A	REA Representative: Rose			
Screen Type/Size:	N/A			Drilling Company: Atlantis			
Riser Diameter:	N/A	Depth:	N/A	Sampling Method: Geoprobe			
Riser Type/Size:	N/A			Reference Point (RP):			
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (in)	Sample Description / Notes	PID (ppm)	Well Profile	Legend	
			fine to medium brown sand			 Concrete	
			gravel some fine to medium brown sand			 Native Material	
5	0-4'	100% ▼	gravel	0.0		 Bentonite	
			silty sand			 Filter Sand	
	4-8'	100%		0.0		 Riser	
10			fine to medium brown sand, some gravel. Rock refusal at 10.0'			 Screen	
	8-12'	100%		0.0		 Water Level	
15							
20							
25							
PROPORTIONS USED			BLOW COUNT (COHESIVE SOILS)	BLOW COUNT (GRANULAR SOILS)		NOTES:	
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE		30-50 DENSE	miniRAE 2000
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE		>50 VERY DENSE	
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE			

				BORING / WELL IDENTIFICATION: MW-5		
				Site Name: Clegg Residence		
				Site Location: Wolcott, Vermont		
Well Depth:	15.0'	Boring Depth:	15.0"	Installation Date: 12-Jan-09		
Depth to Water (during drilling):				11.0'		
Screen Diameter:	1"	Depth:	5.0-15.0'	Job Number: 28-050		
Screen Type/Size: 0.01' slotted schedule 40 PVC				REA Representative: Rose		
Riser Diameter: 1"				Drilling Company: Atlantis		
Riser Type/Size: Schedule 40 PVC				Sampling Method: Geoprobe		
				Reference Point (RP):		
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (in)	Sample Description / Notes	PID (ppm)	Well Profile	Legend
			organic matter, weathered rock, fine brown sand			 Concrete
						 Native Material
	0-4'	100%	medium brown sand, grey schist rock	0.0		 Bentonite
5			fine to medium brown sand, some pebbles, grey schist			 Filter Sand
	4-8'	100%	fine brown sand some grey rock	0.0		 Riser
10			wet fine brown sand.			 Screen
	8-12'	25%	wet fine brown sand. Well set at 15.0' due to rock refusal	0.0		 Water Level
15	12-15'			0.0		
20						
25						
PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	Phochek
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE	
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE		

				BORING / WELL IDENTIFICATION: MW-6		
				Site Name: Clegg Residence		
				Site Location: Wolcott, Vermont		
Well Depth:	15.0'	Boring Depth:	15.0"	Installation Date:	12-Jan-09	
Depth to Water (during drilling):			11.0'	Job Number:	28-050	
Screen Diameter:	1"	Depth:	5.0-15.0'	REA Representative:	Rose	
Screen Type/Size:	0.01' slotted schedule 40 PVC			Drilling Company:	Atlantis	
Riser Diameter:	1"	Depth:	0-5.0'	Sampling Method:	Geoprobe	
Riser Type/Size:	Schedule 40 PVC			Reference Point (RP):		
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (in)	Sample Description / Notes	PID (ppm)	Well Profile	Legend
			organic matter, weathered rock, medium brown sand			 Concrete
						 Native Material
	0-4'	100%	hard grey rock, some medium brown sand	0.0		 Bentonite
5			fine silty sand			 Filter Sand
	4-8'	100%		0.0		 Screen
			fine brown silty sand, some interspersed grey rock/pebbles			 Water Level
10			fine brown silty sand, some interspersed grey rock/pebbles Well set at 15.0' due to rock refusal			
	8-12'	25%		0.0		
15	12-15'			0.0		
20						
25						
PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	Phochek
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE	
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE		

				BORING / WELL IDENTIFICATION: MW-7		
				Site Name: Clegg Residence		
				Site Location: Wolcott, Vermont		
Well Depth:	13.0'	Boring Depth:	13.0'	Installation Date:	12-Jan-09	
Depth to Water (during drilling):				8.0'	Job Number: 28-050	
Screen Diameter:	1"	Depth:	3.0-13.0'	REA Representative:	Rose	
Screen Type/Size:	0.01' slotted schedule 40 PVC			Drilling Company:	Atlantis	
Riser Diameter:	1"	Depth:	0-3.0'	Sampling Method:	Geoprobe	
Riser Type/Size:	Schedule 40 PVC			Reference Point (RP):		
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (in)	Sample Description / Notes	PID (ppm)	Well Profile	Legend
			organic matter, medium brown sand			 Concrete
			medium brown sand and hard grey schist rock	0.0		 Native Material
5	0-4'	100%	medium brown sand, some hard grey schist rock, little gravel			 Bentonite
						 Filter Sand
	4-8'	100% ▼		0.0		 Riser
10			fine brown silty sand and gravel at 10.0'			 Screen
	8-12'	25%		0.0		 Water Level
	12-13'	100%	fine brown wet sand, some gravel Well set at 13.0' due to rock refusal			
15				0.0		
20						
25						
PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	Phochek
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE	
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE		



BORING / WELL IDENTIFICATION: HP-1

Site Name: Clegg Residence

Site Location: Wolcott, Vermont

Installation Date: 12-Jan-09

Job Number: 28-050

REA Representative: Rose

Drilling Company: R.E.A.

Sampling Method: hand auger

Reference Point (RP):

Well Depth: 3.0'

Boring Depth: 3.0'

Depth to Water (during drilling): 1.5'

Screen Diameter: 1"

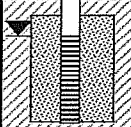







Depth: 1.0-3.0'

Screen Type/Size: 0.01' slotted schedule 40 PVC

Riser Diameter: 1"

Depth: 0-1.0'

Riser Type/Size: Schedule 40 PVC

Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (in)	Sample Description / Notes	PID (ppm)	Well Profile	Legend
			organic matter, dark brown sand	0.0		 Concrete
	0-3'	100%				 Native Material
5						 Bentonite
						 Filter Sand
						 Riser
10						 Screen
						 Water Level
15				0.0		
20						
25						
PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:
AND 33-60%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	Phochek
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE	
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE		

**LABORATORY
ANALYTICAL REPORTS**

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CLIENT: Ross Environmental Associates
Project: 28-050 Clegg
Lab Order: 0901048
Date Received: 1/30/2009

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date	Collection Time
0901048-01A	MW-7	1/28/2009	1:00 PM
0901048-01B	MW-7	1/28/2009	1:00 PM
0901048-02A	MW-6	1/28/2009	1:10 PM
0901048-02B	MW-6	1/28/2009	1:10 PM
0901048-03A	MW-5	1/28/2009	1:20 PM
0901048-03B	MW-5	1/28/2009	1:20 PM
0901048-04A	MW-3	1/28/2009	1:45 PM
0901048-05A	Dup	1/28/2009	12:00 AM
0901048-05B	Dup	1/28/2009	12:00 AM
0901048-06A	TB	1/28/2009	12:00 AM
0901048-07A	SW	1/29/2009	9:00 AM

DATA COMMENT PAGE

Organic Data Qualifiers

ND	Indicates compound was analyzed for, but not detected at or above the reporting limit.
J	Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than the method detection limit.
H	Method prescribed holding time exceeded.
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
B	This flag is used when the analyte is found in the associated blank as well as in the sample.
R	RPD outside accepted recovery limits
RL	Reporting limit; defined as the lowest concentration the laboratory can accurately quantitate.
S	Spike Recovery outside accepted recovery limits.
#	See Case Narrative

Micro Data Qualifiers

TNTC	Too numerous to count
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Inorganic Data Qualifiers

ND or U	Indicates element was analyzed for, but not detected at or above the reporting limit.
J	Indicates a value greater than or equal to the method detection limit, but less than the quantitation limit.
H	Indicates analytical holding time exceedance.
B	Indicates that the analyte is found in the associated blank, as well as in the sample.
MSA	Indicates value determined by the Method of Standard Addition
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
R	RPD outside accepted recovery limits
RL	Reporting limit; defined as the lowest concentration the laboratory can accurately quantitate.
S	Spike Recovery outside accepted recovery limits.
W	Post-digestion spike for Furnace AA analysis is out of control limits (85-115), while sample absorbance is less than 50% of spike absorbance.
*	Duplicate analysis not within control limits.
+	Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995
#	See Case Narrative

Report Comments:

1. Soil, sediment and sludge sample results are reported on a "dry weight" basis.
2. Reporting limits are adjusted for sample size used, dilutions and moisture content, if applicable.

AMRO Environmental Laboratories Corp.

Date: 06-Feb-09

CLIENT: Ross Environmental Associates
Lab Order: 0901048
Project: 28-050 Clegg
Lab ID: 0901048-07A

Client Sample ID: SW
Collection Date: 1/29/2009 9:00:00 AM
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 524.2 REV.4.1 VOCS IN DRINKING WATER E524.2						Analyst: SK
Acetone	ND	10		µg/L	1	2/4/2009 5:04:00 PM
Acrylonitrile	ND	1.0		µg/L	1	2/4/2009 5:04:00 PM
Benzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Bromobenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Bromochloromethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Bromodichloromethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Bromoform	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
2-Butanone	ND	10		µg/L	1	2/4/2009 5:04:00 PM
n-Butylbenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
sec-Butylbenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
tert-Butylbenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Carbon disulfide	ND	1.0		µg/L	1	2/4/2009 5:04:00 PM
Carbon tetrachloride	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Chlorobenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Chloroethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Chloroform	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Chloromethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
2-Chlorotoluene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
4-Chlorotoluene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Dibromochloromethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,2-Dibromo-3-chloropropane	ND	1.0		µg/L	1	2/4/2009 5:04:00 PM
1,2-Dibromoethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Dibromomethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,2-Dichlorobenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,3-Dichlorobenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,4-Dichlorobenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Dichlorodifluoromethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,1-Dichloroethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,2-Dichloroethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,1-Dichloroethene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
cis-1,2-Dichloroethene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
trans-1,2-Dichloroethene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,2-Dichloropropane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,3-Dichloropropane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
2,2-Dichloropropane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,1-Dichloropropene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
cis-1,3-Dichloropropene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
trans-1,3-Dichloropropene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Diethyl ether	ND	2.0		µg/L	1	2/4/2009 5:04:00 PM

AMRO Environmental Laboratories Corp.

Date: 06-Feb-09

CLIENT: Ross Environmental Associates
Lab Order: 0901048
Project: 28-050 Clegg
Lab ID: 0901048-07A

Client Sample ID: SW
Collection Date: 1/29/2009 9:00:00 AM
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Hexachlorobutadiene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
2-Hexanone	ND	10		µg/L	1	2/4/2009 5:04:00 PM
Isopropylbenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
4-Isopropyltoluene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Methylene chloride	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	2/4/2009 5:04:00 PM
Methyl tert-butyl ether	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Naphthalene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
n-Propylbenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Styrene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Tetrachloroethene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Tetrahydrofuran	ND	5.0		µg/L	1	2/4/2009 5:04:00 PM
Toluene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,2,3-Trichlorobenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,2,4-Trichlorobenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,1,1-Trichloroethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,1,2-Trichloroethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Trichloroethene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Trichlorofluoromethane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,2,3-Trichloropropane	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,2,4-Trimethylbenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
1,3,5-Trimethylbenzene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Vinyl chloride	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
o-Xylene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
m,p-Xylene	ND	0.50		µg/L	1	2/4/2009 5:04:00 PM
Surr: 1,2-Dichloroethane-d4	96.4	70-130		%REC	1	2/4/2009 5:04:00 PM
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	2/4/2009 5:04:00 PM
Surr: Dibromofluoromethane	102	70-130		%REC	1	2/4/2009 5:04:00 PM
Surr: Toluene-d8	106	70-130		%REC	1	2/4/2009 5:04:00 PM

AMRO Environmental Laboratories Corp.

Date: 06-Feb-09

CLIENT: Ross Environmental Associates
Project: 28-050 Clegg**Lab Order:** 0901048**Lab ID:** 0901048-01**Collection Date:** 1/28/2009 1:00:00 PM**Collection Time:****Client Sample ID:** MW-7**Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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EPA 8260B AROMATIC VOLATILES BY GC/MS**SW8260B**

Analyst: SK

Methyl tert-butyl ether	ND	1.0		µg/L	1	2/3/2009 1:53:00 PM
Benzene	ND	1.0		µg/L	1	2/3/2009 1:53:00 PM
Toluene	ND	1.0		µg/L	1	2/3/2009 1:53:00 PM
Ethylbenzene	ND	1.0		µg/L	1	2/3/2009 1:53:00 PM
m,p-Xylene	ND	2.0		µg/L	1	2/3/2009 1:53:00 PM
o-Xylene	ND	2.0		µg/L	1	2/3/2009 1:53:00 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/3/2009 1:53:00 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/3/2009 1:53:00 PM
Naphthalene	ND	1.0		µg/L	1	2/3/2009 1:53:00 PM
Surr: Dibromofluoromethane	102	85-119		%REC	1	2/3/2009 1:53:00 PM
Surr: 1,2-Dichloroethane-d4	94.6	79-131		%REC	1	2/3/2009 1:53:00 PM
Surr: Toluene-d8	95.1	90-110		%REC	1	2/3/2009 1:53:00 PM
Surr: 4-Bromofluorobenzene	104	76-117		%REC	1	2/3/2009 1:53:00 PM

Lab ID: 0901048-02**Collection Date:** 1/28/2009 1:10:00 PM**Collection Time:****Client Sample ID:** MW-6**Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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EPA 8260B AROMATIC VOLATILES BY GC/MS**SW8260B**

Analyst: SK

Methyl tert-butyl ether	ND	1.0		µg/L	1	2/3/2009 2:27:00 PM
Benzene	ND	1.0		µg/L	1	2/3/2009 2:27:00 PM
Toluene	ND	1.0		µg/L	1	2/3/2009 2:27:00 PM
Ethylbenzene	ND	1.0		µg/L	1	2/3/2009 2:27:00 PM
m,p-Xylene	ND	2.0		µg/L	1	2/3/2009 2:27:00 PM
o-Xylene	ND	2.0		µg/L	1	2/3/2009 2:27:00 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/3/2009 2:27:00 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/3/2009 2:27:00 PM
Naphthalene	ND	1.0		µg/L	1	2/3/2009 2:27:00 PM
Surr: Dibromofluoromethane	105	85-119		%REC	1	2/3/2009 2:27:00 PM
Surr: 1,2-Dichloroethane-d4	97.1	79-131		%REC	1	2/3/2009 2:27:00 PM
Surr: Toluene-d8	92.1	90-110		%REC	1	2/3/2009 2:27:00 PM
Surr: 4-Bromofluorobenzene	103	76-117		%REC	1	2/3/2009 2:27:00 PM

AMRO Environmental Laboratories Corp.

Date: 06-Feb-09

CLIENT: Ross Environmental Associates
Project: 28-050 Clegg**Lab Order:** 0901048**Lab ID:** 0901048-03**Collection Date:** 1/28/2009 1:20:00 PM**Collection Time:****Client Sample ID:** MW-5**Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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EPA 8260B AROMATIC VOLATILES BY GC/MS**SW8260B**

Analyst: SK

Methyl tert-butyl ether	ND	1.0		µg/L	1	2/3/2009 1:19:00 PM
Benzene	ND	1.0		µg/L	1	2/3/2009 1:19:00 PM
Toluene	ND	1.0		µg/L	1	2/3/2009 1:19:00 PM
Ethylbenzene	ND	1.0		µg/L	1	2/3/2009 1:19:00 PM
m,p-Xylene	ND	2.0		µg/L	1	2/3/2009 1:19:00 PM
o-Xylene	ND	2.0		µg/L	1	2/3/2009 1:19:00 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/3/2009 1:19:00 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/3/2009 1:19:00 PM
Naphthalene	ND	1.0		µg/L	1	2/3/2009 1:19:00 PM
Surr: Dibromofluoromethane	98.6	85-119		%REC	1	2/3/2009 1:19:00 PM
Surr: 1,2-Dichloroethane-d4	94.4	79-131		%REC	1	2/3/2009 1:19:00 PM
Surr: Toluene-d8	94.8	90-110		%REC	1	2/3/2009 1:19:00 PM
Surr: 4-Bromofluorobenzene	101	76-117		%REC	1	2/3/2009 1:19:00 PM

Lab ID: 0901048-04**Collection Date:** 1/28/2009 1:45:00 PM**Collection Time:****Client Sample ID:** MW-3**Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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EPA 8260B AROMATIC VOLATILES BY GC/MS**SW8260B**

Analyst: SK

Methyl tert-butyl ether	ND	1.0		µg/L	1	2/4/2009 12:14:00 PM
Benzene	ND	1.0		µg/L	1	2/4/2009 12:14:00 PM
Toluene	ND	1.0		µg/L	1	2/4/2009 12:14:00 PM
Ethylbenzene	ND	1.0		µg/L	1	2/4/2009 12:14:00 PM
m,p-Xylene	ND	2.0		µg/L	1	2/4/2009 12:14:00 PM
o-Xylene	ND	2.0		µg/L	1	2/4/2009 12:14:00 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/4/2009 12:14:00 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/4/2009 12:14:00 PM
Naphthalene	ND	1.0		µg/L	1	2/4/2009 12:14:00 PM
Surr: Dibromofluoromethane	109	85-119		%REC	1	2/4/2009 12:14:00 PM
Surr: 1,2-Dichloroethane-d4	99.4	79-131		%REC	1	2/4/2009 12:14:00 PM
Surr: Toluene-d8	96.2	90-110		%REC	1	2/4/2009 12:14:00 PM
Surr: 4-Bromofluorobenzene	109	76-117		%REC	1	2/4/2009 12:14:00 PM

AMRO Environmental Laboratories Corp.

Date: 06-Feb-09

CLIENT: Ross Environmental Associates
Project: 28-050 Clegg**Lab Order:** 0901048**Lab ID:** 0901048-05**Collection Date:** 1/28/2009**Collection Time:****Client Sample ID:** Dup**Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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EPA 8260B AROMATIC VOLATILES BY GC/MS**SW8260B**Analyst: **SK**

Methyl tert-butyl ether	ND	1.0		µg/L	1	2/3/2009 3:01:00 PM
Benzene	ND	1.0		µg/L	1	2/3/2009 3:01:00 PM
Toluene	ND	1.0		µg/L	1	2/3/2009 3:01:00 PM
Ethylbenzene	ND	1.0		µg/L	1	2/3/2009 3:01:00 PM
m,p-Xylene	ND	2.0		µg/L	1	2/3/2009 3:01:00 PM
o-Xylene	ND	2.0		µg/L	1	2/3/2009 3:01:00 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/3/2009 3:01:00 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/3/2009 3:01:00 PM
Naphthalene	ND	1.0		µg/L	1	2/3/2009 3:01:00 PM
Surr: Dibromofluoromethane	104	85-119		%REC	1	2/3/2009 3:01:00 PM
Surr: 1,2-Dichloroethane-d4	100	79-131		%REC	1	2/3/2009 3:01:00 PM
Surr: Toluene-d8	93.5	90-110		%REC	1	2/3/2009 3:01:00 PM
Surr: 4-Bromofluorobenzene	113	76-117		%REC	1	2/3/2009 3:01:00 PM

Lab ID: 0901048-06**Collection Date:** 1/28/2009**Collection Time:****Client Sample ID:** TB**Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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EPA 8260B AROMATIC VOLATILES BY GC/MS**SW8260B**Analyst: **SK**

Methyl tert-butyl ether	ND	1.0		µg/L	1	2/3/2009 12:45:00 PM
Benzene	ND	1.0		µg/L	1	2/3/2009 12:45:00 PM
Toluene	ND	1.0		µg/L	1	2/3/2009 12:45:00 PM
Ethylbenzene	ND	1.0		µg/L	1	2/3/2009 12:45:00 PM
m,p-Xylene	ND	2.0		µg/L	1	2/3/2009 12:45:00 PM
o-Xylene	ND	2.0		µg/L	1	2/3/2009 12:45:00 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/3/2009 12:45:00 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/3/2009 12:45:00 PM
Naphthalene	ND	1.0		µg/L	1	2/3/2009 12:45:00 PM
Surr: Dibromofluoromethane	95.8	85-119		%REC	1	2/3/2009 12:45:00 PM
Surr: 1,2-Dichloroethane-d4	95.2	79-131		%REC	1	2/3/2009 12:45:00 PM
Surr: Toluene-d8	91.7	90-110		%REC	1	2/3/2009 12:45:00 PM
Surr: 4-Bromofluorobenzene	104	76-117		%REC	1	2/3/2009 12:45:00 PM

AMRO Environmental Laboratories Corp.

Date: 06-Feb-09

CLIENT: Ross Environmental Associates
Project: 28-050 Clegg**Lab Order:** 0901048**Lab ID:** 0901048-01**Collection Date:** 1/28/2009 1:00:00 PM**Collection Time:****Client Sample ID:** MW-7**Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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DIESEL RANGE ORGANICS**SW8015B**

Analyst: SD

Diesel Range Organics	ND	0.62		mg/L	1	2/4/2009 5:19:00 PM
Surr: o-Terphenyl	86.4	31-131		%REC	1	2/4/2009 5:19:00 PM

Lab ID: 0901048-02**Collection Date:** 1/28/2009 1:10:00 PM**Collection Time:****Client Sample ID:** MW-6**Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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DIESEL RANGE ORGANICS**SW8015B**

Analyst: SD

Diesel Range Organics	ND	0.58		mg/L	1	2/4/2009 6:00:00 PM
Surr: o-Terphenyl	94.4	31-131		%REC	1	2/4/2009 6:00:00 PM

Lab ID: 0901048-03**Collection Date:** 1/28/2009 1:20:00 PM**Collection Time:****Client Sample ID:** MW-5**Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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DIESEL RANGE ORGANICS**SW8015B**

Analyst: SD

Diesel Range Organics	ND	0.74		mg/L	1	2/5/2009 3:23:00 PM
Surr: o-Terphenyl	30.5	31-131	S	%REC	1	2/5/2009 3:23:00 PM

Lab ID: 0901048-05**Collection Date:** 1/28/2009**Collection Time:****Client Sample ID:** Dup**Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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DIESEL RANGE ORGANICS**SW8015B**

Analyst: SD

Diesel Range Organics	ND	0.58		mg/L	1	2/4/2009 7:24:00 PM
Surr: o-Terphenyl	87.9	31-131		%REC	1	2/4/2009 7:24:00 PM

Project No.: 28-050	Project Name: C699	Project State: VT	Project Manager: Jim Fox	Samplers (Signature): [Signature]	AMRO Project No.:
P.O.#:	Results Needed by:	Matrix	Total # of Cont. & Size	Comp.	Grab
QUOTE #:	Seal Intact? Yes No N/A	Date/Time Sampled			
Sample ID.:	128/09	H ₂ O	440mL	X	
MW-7	13:00		440mL	X	
MW-6	13:10		440mL	X	
MW-5	13:20		440mL	X	
MW-3	13:45		440mL	X	
DUP			440mL	X	
TB	2:30		240mL	X	
SW	12/09 9:00		240mL	X	
/	/		/		
/	/		/		
Preservative: Cl-HCl, MeOH, N-HNO3, S-H2SO4, Na-NaOH, O-Other					
Send Results To:		PRIORITY TURNAROUND TIME AUTHORIZATION			
REA		Before submitting samples for expedited TAT, you must have a coded AUTHORIZATION NUMBER			
		AUTHORIZATION No.:	BY:		
PHONE #: 802-253-4280	FAX #:				
E-mail:					
Relinquished By:	Date/Time				
[Signature]	1/28/09 15:30				
Please print clearly, legibly and completely. Samples can not be logged in and the turnaround time clock will not start until any ambiguities are resolved.					
White: Lab Copy	Yellow: Client Copy				

[illegible]



24-Hour Emergency Phone Number
1-800-843-8265

Please print or type

BILL OF LADING

1. Document No. 1 3 3 5 5 V
2. Page 1 of 1

3. Generator's Name and Mailing Address
JOHN & BELINDA CLEGG
729 CORLEY ROAD
WOLCOTT VT 05680

Site Address
729 CORLEY ROAD
WOLCOTT VT 05680

4. Generator's Phone (802) 498-3009

5. Transporter 1 Company Name
ENVIRONMENTAL PROD & SVCS OF VT, INC

A. State Transporter's ID **VT/3046**
B. Transporter 1 Phone **(315) 671-1693**

7. Transporter 2 Company Name

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address

10.
ENVIRONMENTAL PROD & SVCS OF VT, INC.
300 SMITH BLVD.
HM ALBANY NY 12202

E. State Facility's ID

F. Facility's Phone
(618) 465-4000

11. Shipping Name

12. Containers
No. Type

13. Total
Quantity

14. Unit
Wt./Vol.

a. **NON-RCRA, NON-DOT SOLIDS, N.O.S.**
(PETROLEUM CONTAMINATED SOIL)

4

D M

1200

P

b.

c.

d.

G. Additional Descriptions for Materials Listed Above

a. **FUEL OIL SOLIDS**
1 X55, #A0309041-DT
b.

c.

d.

H. Handling Codes for Material Listed Above

a. **801**
b.

c.
d.

15. Special Handling Instructions and Additional Information

JOB #: V0519

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this document are not subject to federal manifest requirements.

Printed/Typed Name

Craig Klimes

Signature

(on behalf of JIBCless)

Date

Month Day Year
3 17 09

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Timothy B. Hill

Signature

T. B. Hill

Date

Month Day Year
3 17 09

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the materials covered by this bill of lading except as noted in item 18.

Printed/Typed Name

John Holtzman

Signature

John Holtzman

Date

Month Day Year
3 20 09

BILL OF LADING

GENERATOR

TRANSPORTER

FACILITY